NATIONAL INSTITUTE OF SIDDHA

Chennai - 47

AFFILIATED TO

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI - 600 032

A STUDY ON

AZHAL KEEL VAAYU

(DISSERTATION SUBJECT)

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH III – SIRAPPU MARUTHUVAM

SEPTEMBER – 2007

ACKNOWLEDGEMENT

First of the author extremely grateful to **Lord Almighty** to empowered the author with his blessings and grace to complete this dissertation work successfully.

The author is extremely grateful to the almighty for the successful completion of this dissertation work,.

The author expresses here sincere thanks to the **Vice – Chancellor**, The Tamilnadu Dr. M.G.R. Medical University, Chennai-32..

The author extend her sincere thanks to **Dr. V. Arunachalam M.D.(s**), Director, National Institute of Siddha, Chennai, for granting permission to undertake a study in this dissertaion topic and also for providing all the basic facilities in order to carry out this work.

The author is very much grateful to **Dr. G.Thiagarajan, M.D(s).,**Associate Prof., and Head of the Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai for his encouragement, suggestion and valuable guidance in this dissertation work.

The author is grateful to **Dr.R.S.Ramaswamy, M.D(s)**, Associate Professor, Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai for his valuable guidance and support in this dissertation work.

The author is grateful to **Dr.T.R. Siddique Ali, M.D(s)**, Lecturer, department of Sirappu Maruthuvam, National Institute of Siddha, Chennai for his guidance and support in this dissertation work.

I wish to thank all faculties in the National Institute of Siddha for their encouragement

The author owes special thanks to **Dr.k.v.Chandrasekaran** M.B.B.S.,D.Ortho, M.S. Ortho Head of the Department of Orthopaedics, **Dr.P.Thirunavukarasu** M.B.B.S D.Ortho, Professor, **Dr.M.Suresh babu** M.B.B.S., M.S. Ortho, Tutor, **Dr.R.Sundarapandian**, M.B.B.S., D.Ortho, Tutor of the Department of Orthopaedics, Chengalpattu Medical College Hospital.

The author exresses her thanks to **Dr.D. Porselvi** M.B.B.S., D.M.R.D. Department of Radiology, Chengalpattu Medical College Hospital.

The author expresses thanks to **Dr.S.Venkatraman Ph.D**., Director, C.L. Baid Metha College of Pharmacy, Thoraipakkam, Chennai – 4

I wish to thank **Dr. S. Somasundaram, M.Sc, M.Phil, Ph.D**., Asst. Professor, Department of Medicinal Botany for his guidance and help in identification of herbs in this dissertation work.

I also thank and **Mr. Rathnam, and Mrs. M. Vimala, M.Lib**, National Institute of Siddha,Chennai for their help in literature collection.

I wish to thank my friend Dr. **M.Tamilselvi** M.D (S) for her heartful help.

I also thank to my collegue and gratitude for their selfless help in this study.

My sincere thanks to **Mrs.G. Rajini,B.Sc & M. Amjed Khan** Jan Computer for their co – operation in bringing out this dissertation work in full fledged manner

INTRODUCTION

Man is a wonderful creature blessed by God. Imagination and laughter are milestones on the way that distinguishes mn from other animals. Of mere living, no man was ever proud; but the god life has always been his aim.

The aim of the History of Siddha Medicine is to present a faithful, clear and vivid picture of this system in all its manifestation and ramifications with all its inherent problems and relevancy to present age from its very beginning down the ages, as an integral component of the patterns of culture through which this system has passed in different ages and in different areas.

The unique nature of this system is its continuoes service to humanity for more than five thousand years in combating diseases and in maintaining its physical, mental, and moral health, while many of its contempraries had completed their courses long long age, since its origin, development and remifications have become obscure, any literary research on this subjective, to be scientific and useful, should commence with a comparative study of the medicines of those ancient civilizations, which will illuninate many of the dark cornersmof our systems.

The enormous pharmacopoeia containg vegetable, animal, and mineral products at times, including substance of disgusting character; empirical treatments, under the guise of magic exoricsm, incantation, pilgrimage, percegrination, mountainering and similar activities.

Many principles on which very efficacious siddha medicines are prepared and treatments given, make us believe they had a detailed understanding of many of the fundamentals of biology, such as how enzymes work, how proteins perform mechanical, protective and catalytic function, and how proteins perform mechanical, protective and catlytic functions, and how glucose is metabolised for energy. The knowledge of the function of the enzymes Siddhas put into practice, is really marvellous when we consider the different ordinarilly inexplicable effective simple treatments of this system.

These medicines may be roughly divided into three classes as (1) Miracle medicines, (2) sophisticated medicines, and (3) Common medicines. Miracle medicines are becoming rare and should be learned direct from the masters who, having undergone all forms of initiation and hazards of apprenticeship, have reached perfection in all respects. Sophisticated medicines may be scientifically prepared and used by the well trained physicians without much risk. Common medicines are the most simple and very cheap things which were in wide use till the beginning of this century and are still in use in remote rural parts of our country.

Man is hale and healthy when his life moves along with nature when he violates against it he is oushed into mental stress, detriorates his physique and ultimately his sound mind.

Todays mdern industrialization imbalances the Ecosystem which paves way for many disease. To uproot these diseases there should be a system of medicine which goes hand in hand with the nature.

In the legend of science the only system with rich Dravidian culture is the noble Siddha System of Medicine. It is holistic and treats the complete individual and not merely the disease. The treatment vries for different individuals based on their constitution (Prakriti) and dietary habits.

It is pround and pleasure for the author to be in this field and to take up the dissertaion on the disease that leads to many patients in despair.

The author has chosen “Azhal keel Vaayu” (Osteoarthritis), one of the degenerative disease as the topic for dissertation subject.

AIM AND OBJECTIVES

Azhal keel Vaayu (Osteoarthritis) is a very common condition affecting the joints more frequently with aging. It's a major cause of morbidity of the working force, throughout the world.

The extrapolation rate of osteoarthritis in our country is 78, 341,013 and the estimated population is 1, 065, 070, 607 (US census bureau, international Date Base – 2007)

So the author is much interested in choosing this disease as the topic for dissertation and treating the same with the help of Mirudharsingi Chunnam–65mg–twice a –day internally and poochu ennai externally.

The aim and objective of this dissertation, is stated as below.

1. Siddha system of medicine should reach the entire society of the world.
2. The unique aspect of Siddha principles namely the three dosham theories with respect of body constitution (yaakai), taste (suvai) and seasonal variation (Paruvakalam) are interpreted with the disease.
3. Relevant evidence from various Siddha literature and other system of medicine to be attached.
4. To study the incidence of the disease with respect to age, Gender, socio-economic status, habit and family history.

5. To know the correlation of aetiology, clinical features, signs and symptoms of Azhal keel vaayu in siddha aspect with osteoarthritis in modern aspect.
6. To have a detailed clinical investigations.
7. To have a clinical trial on Azhal keel Vaayu with Mirudharsingi Chunnam internally and poochu ennai externally.
8. To estimate the efficacy of Mirudharsingi Chunam and Poochu ennai
9. To evaluate the biochemical, pharmacological and toxicological reports of dissertation medicine.
10. To pave way for further research work in future.

SIDDHA ASPECTS

Siddhars, spiritual scientists explored and explained the reality of Nature and its relationship to man by their yogic awareness. According to Siddha philosophy, man is nothing but a miniature world containing the five basic elements.

Universe originally consisted of atoms which contributed to the five basic elements (Pancha boothas) namely, Earth, Water, Fire, Air and Ether which corresponds to the five sense of the human body and they were the fundamentals of all human body and all the corporal things.

The Earth (மண்) gives shape to the body and release its energy, Bones, muscles, nerves represent it in the body.

The Water (நீர்) makes the earth supply and helps in the transmission of energy, serum, lymph, saliva, etc., represent it in the body.

The Fire (தீ) makes the form of the body steady and gives vigour and stimulation. Digestion and circulation represent it in the body.

The Air (வளி) Ignites the fire and works as a life carrier and is the support of all contact and exchange. Respiratory and nervous system represent it in the body.

The Ether (ஆகாயம்) is the creater of life itself in the body.

A harmonious combination and function of these five elements in the body produce a healthy life.

Man has gross physical body (ஸ்தூலம்) and subtle physical body (சூக்குமம்). The life force which is different from material energy derived from food, pervades the gross physical through the subtle physical.

The food we eat has six tastes namely Sweet (இனிப்பு), Sour (புளிப்பு), Salt (உப்பு), Bitter (கைப்பு) , Pungent (கார்ப்பு), Astringent (துவர்ப்பு).

Each of them is a mixture of two basic elements.

- இனிப்பு - மண் + நீர்
- புளிப்பு - மண் +தீ
- உப்பு - நீர் + தீ
- கைப்பு - காற்று + ஆகாயம்
- துவர்ப்பு - மண் + ஆகாயம்

Panchboothas are the foundations for Three dosham Vaatham, Piththam, Kabam) which are the pillars that support our body structure

- Vaayu Constitute Vaatham
- Theyu Constitute Piththam
- Appu Constitute Kabam

Any alterations in the level of mukkuttrams affects the normal functions of the body. This is obvious from the verses,

மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா வெண்ணிய மூன்று

- திருக்குறள் (மருந்து)

The normal values of the mukkuttrams are in the ratio of

Vaatham : Piththam : Kabam= 1 : ½ : ¼

“வழங்கிய வாதம் மாத்திரை யொன்றில்

தழங்கிய பித்தந் தன்னிலரை வாசி

அழங்குங் கபந்தானடங்கியே காலோடில்

பிறங்கிய சீவர்க்குப் பிச கொன்றுமில்லையே”

- குணவாகடம்

Alterations in the ratio, produces disease. The signs and symptoms are produced according to the particular deranged kuttrams.

AZHAL KEEL VAAYU

In Siddha literature Azhal keel Vaayu comes under the topic of Vatha disease. Keel Vaayu is the general term that includes all kinds of joint disease (locomotor system)

Description of the nomenclature

Azhal keel Vaayu = Azhal + keel + Vaayu

Azhal = Piththam

Keel = Joint

Vaayu = Vaatham

Initially the joint is affected by the vitiated vaatham, kabam and piththam is accompanied later. Also this is a disease of Pitha kaalam middle 1/3 of the life span.

CLASSIFICATION:

In Siddha maruthuvam, keel vaayu is classified into ten types.

1. Vali keel Vaayu
2. Azhal keel vaayu
3. Iyya keel vaayu
4. Vali azhal keel vaayu
5. Azhal vali keel vaayu
6. Vali Iyya keel vaayu
7. Azhal Iyya keel vaayu
8. Iyya vali keel vaayu
9. Iyya azhal keel vaayu
10. Mukkutra keel vaayu.

நோய் வரும் வழி (Aetiology):

கால இயல்பு - Environmental Factors:

வாதவர்த் தன காலமேதோ வென்னில்
மருவுகின்ற ஆனி கற்கட மாதம்
ஆதனைப் பசியோடு கார்த்திகை தன்னில்
ஆடருமே மற்ற மாதங்கள் தன்னில்
போகவே சமிக்கின்ற காலமாகும்

- யூகி சிந்தாமணி

The Vaatha disease will be precipiated in the months from Aani to karthigai (June to December)

பதுமத்தைப் பூக்க வைக்கும் பானுமிகக் காயும்
முதுவேனி லிற்பு விற்நீர் முற்றும் - கதுமென
வற்றும் கபமி.ீ.கும் வாயுமிகும் வாழ்மாந்தர்க்
குற்ற நலிக் கேதிதென் றோது

- சித்த மருத்துவாங்க சுருக்கம்

In Muthuvenil kaalm, the increased solar radiation increases the evaporation of water content in the world, on the same time these similar action on the body produces increases absorption of mucous for digestion and develop the vitality of Vatha disease. So, this disease occurs predominantly in muthuvennil kaalam.

உணவுவகைகள் - Diet:

"வளி தரு காய்கிழங்கு வரைவிலா தமிலல் கோழை
புளி தயிர் போன்மிகுக்கு முறையிலா வுண்டி கோடல்
குளிர்தரு வளியிற் றேகங் குனிப்புற வுலவல் பெண்டிர்
குளிதரு முயக்கம் பெற்றோர் கடிசெயல் கருவியாமால்."

- சபாபதி கையேடு

வாத குற்றத்தை மிகைப்படுத்தக் கூடிய கிழங்கு வகைகள், குளிர்ச்சியை தரக்கூடிய பதார்த்தங்கள் மிகுதியாக உண்ணல், குளிர்ந்த காற்றில் இருத்தல், மழையில் நனைதல் பனிக்காற்று மேலே விழுதல் மலைப்பிரதேசங்களில் வசித்தல் அளவு கடந்து உடலுறவு கொள்ளல் மற்றும் பரம்பரையின் காரணமாகவும் தோன்றும்.

தொழில் பெறு கைப்புக்கார்த்தல் துவர்த்தல் விங்சுகினுஞ்சோறும்
பழையதாம் வரகு மற்றைப் பைந்தினையருந்தினாலும்
எழில் பெறப் பகலுறங்கி இரவினிலுறங்காததாலும்
மழை நிகா குழலினாலே வாதங்கோ பிக்குங்காணே.

- பரராச சேகரம்

கசப்பு, துவர்ப்பு கார்ப்பு பதார்த்தங்களை மிகுதியாக உண்ணல் பழைய சோறு வரகு திணை உண்ணல் பகலில் தூங்கி இரவு விழித்திருத்தல் ஆகிய காரணங்களினாலும் வாதம் மிகுபடும்.

பழக்க வழக்கங்கள் (Habits)

வெய்யிலில் நடக்கையாலும் மிகத்தண்ணீர் குடிக்கையாலும்
செய்யிழை மகளினரைச் சேர்ந்தனுப விக்கையாலும்
பையனே உண்மையாலும் பாகற்காய் தின்கையாலும்
தையலே வாதரோகம் சனிக்குமென் றறிந்து கொள்ளே.

- தேரையர் வாகடம்

Excessive walking in hot sun , excessive intake of bitter guard etc, may play a role disturb the normal functions of vaatham.

வாதநோய்க்கான இயல்பு: (Characteristic features of Vaatha)

வாதமே கதித்த போது வாயுவுமெழும்புங் காண்டீர்
வாதமே கதித்த போது வாயுவந்திடுஞ் சன்னி தோஷம்
வாதமே கதித்த போது வல்லடுன் மெலிந்து கொல்லும்.

- அகத்தியர் சிகிச்சா ரத்னா தீபம்.

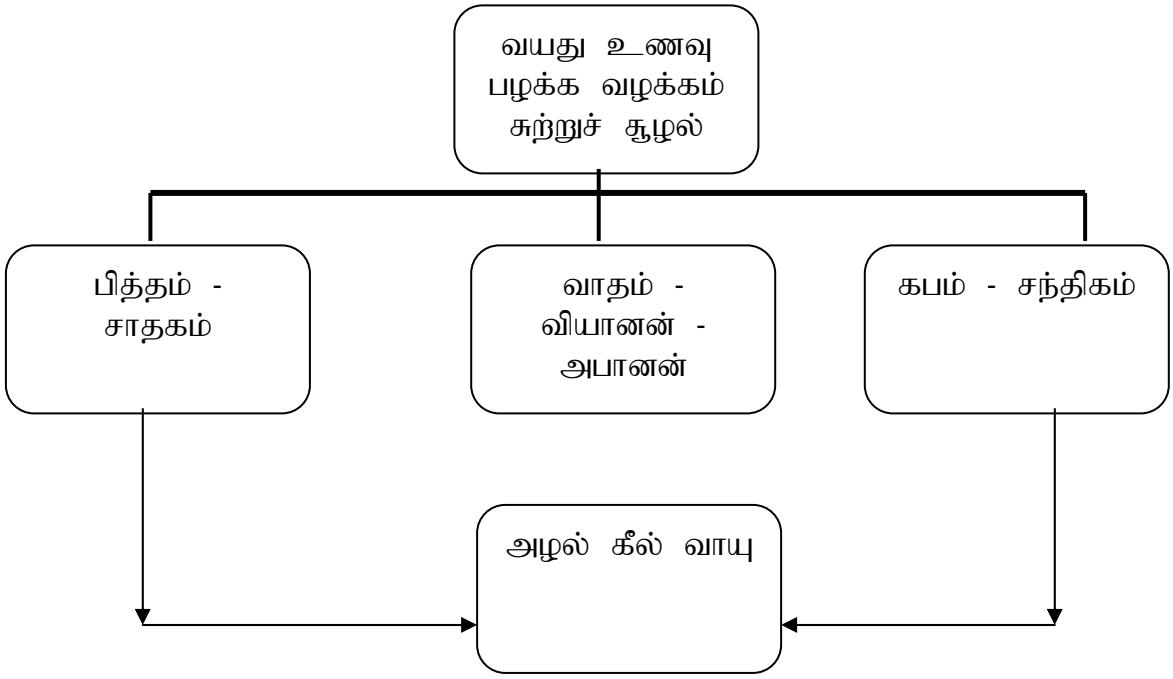
வாதம் மிகும்போது வாயு மிகும். சன்னிதோடம் போன்ற பல வியாதிகள் வந்து சேரும் உடல் மெலியும்.

வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்கு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்
ஓதரிய வாதமனலாகு நடுக்கமுண்டாம் பொருள்களயர்ந்த
தீதெனவே நரம்பித்து சந்துகள் தோறுங்கடக்குந் தினமுந்தானே

- தேரையர் வாகடம்

வாதம் மிகும்போது பசியின்மை, உடல் கடுப்பு, சுரம், இருமல், உறக்கமின்மை, உடல் நடுக்கம் நரம்புத்தளர்ச்சி சந்துகள் தோறும் குடைதல் போன்ற குறிகுணங்கள் தோன்றும்.

நோய் வரும் வழி - முக்குற்ற பாதிப்பு



நோய் குறிகுணங்கள் (Clinical Features)

பித்த கீல்வாயு தன்னாற் கீல்முட்டுவீங்கிச்
சித்தர் செய்மருத்துவச் சீர்படாத
தக்கறு காய்ச்சல் கண்டு சாலவே தனைதான தந்தே
மெத்தறு சிகிச்சை தன்னதல் மென்மேல் நீக்குமப்பா

- சபாபதி கையேடு

இது, வளிக்குற்றம் தன்னிலையில் மிகுந்துள்ளபோது அழல் குற்றத்தைத் தூண்டக் கூடிய உணவு, செய்கை முதலியவற்றால் பிறக்கும் நோயாம். இந்நோயில், முட்டிகளில் உண்டாகும் வீக்கம் நாளுக்குநாள் பெருத்துக் கொண்டே வந்து, மிகுந்த தீக்குற்றத்தால் கீல்களினிடையேயுள்ள பசை வறண்டு பசையற்றுக் கீல் அசையும் போதெல்லாம் நட்டையுடைதலும் "கலுக்" "கலுக்" கென்ற ஓர் ஒலி உண்டாவதுமாய் இருக்கும். சிலவேளைகளில் கீலுக்குக் கீல் கூடி ஒட்டிக்கொண்டு ஒரு கழிபோல மடக்க முடியாமலே நின்று விடுவதும் உண்டு. இந்நோய்க்கு சிறுசுரமும் வரும்.

It is characterized by swelling of joints associated with severe pain and pyrexia. Since it is not quickly responding to medicine the prolongs medical care is said to be essential. As piththa increases, kaba (mucuous) in the joint decrease and hence dryness occur. So, during flexion of the joint crepitation is produced.

நோய் கணிப்பு (Diagnosis):

Piniyari Muraimal is a method of diagnosing a disease (affecting the mankind) it is based upon three main principles;

1. Poriyalarithal (Inspection)
2. Pulanalarithal (Palpation)
3. Vinaathal (Interrogation)

Physicians ‘ Pori’ and Pulan’ are used as tools for examing the ‘pori pulan’ of the patient.

The above principles correspond to the methodology of 1. Inspection, 2. Interrogation and 3. Palpation in modern medicine, in arriving a clinical diagnosis of the disease.

1. Poriyalarithal (Inspection)

Pori is considered as the five senses of perception namely

1. Nose 2. Tongue 3. Eye 4. Skin 5. Ear

‘Poriyalarithal’ is examining the ‘pori’ of the patient by the physician for diagnosing.

2. Pulanalarithal (Palpation)

‘Pulan’ are five object of senses. They are,

1. Smell 2. Taste 3. Vision

4. Sensation to touch 5. Hearing

‘Pulanalarithal’ means examination of the ‘pulan’ of the patient by the physician for diagnosing purpose.

3. Vinaathal (Interrogation)

Vinathal is gathering the informations regarding the history of diseases, its clinical features etc, from the patient or his close relatives who are taking care of him, when the patient is not in a position to speak or of the patient is a child.

அளவைகள் (Logics)

Alavaigal are used in clinical diagnose of a disease.

அளவை காண்டல் கருதல் உரை அபாவம் பொருள் ஒப்பாறென்பர்
அளவை மேலும் ஒலிபுண்மை யைதிகத் தோடியல் பென நான்
களவை காண்பர் அவையிற்றின் மேலும் அறைவர் அவையெல்லாம்
அளவை காண்டல் கருதல், உரை என்றும் மூன்றிலடங்கிடுமே.

- சிவசித்தியார் அளவை எண். 6

Alavai is divided in to ten types, they are

1.	Observation	-	காண்டல்	6.	Comparison	-	உபமானம்
2.	Inference	-	கருதல்	7.	Inference by elimination	-	பாரிசேஷம்
3.	Authority, Literature	-	உரை	8.	Probability	-	சம்பவம்
4.	Preception	-	அபாவம்	9.	Tradition	-	ஐதீகம்
5.	Presumption	-	அருத்தப்பத்தி	10.	Natural Inference	-	இயல்பு

The above mentioned ‘ten alavaigal’ the main three alavaigal are:

1. Kaandal (Inspection by Siddha Method)

Through ‘ kaandal’ the physician can directly see the patient hear the patients all the complaints and at length concludes a diagnosis.

2. Karuthal (Through Siddha Investigation)

Through Envagai thervu, Neerkuri and Neikuri, we can diagnose a disease by Karuthal.

3. Urai (Literature evidence of Siddha)

Comparative study of the signs and symptos of the patient with the reference books and come to a diagnosis.

Ennvagai thervugal (Eight diagnostic tools)

Siddhars have developed a unqiue method of diagnosing the disease by “Enn vagai thervugal’

“நாடி ஸ்பரிசம் நா நிறம் மொழி விழி
மலம் மூத்தரமிவை மருத்துவராயுதம்”

- நோய் நாடல் நோய் முதல் நாடல (முதல் பாகம்)

மெய்க்குறி நிறம் தொனி விழி நா இருமலம் கைக்குறி

- தேரையர்

Hence the diagnosis is made by the following.

1.	Naadi	(Pulse)	5.	Mozhi	(Voice)
2.	Sparisam	(Sensation to Touh)	6.	Vizhi	(Eyes)
3.	Naa	(Tongue)	7.	Malam	(Faeces)
4.	Niram	Colour	8.	Moothiram	(Urine)

The speciality of eight tools of diagnosis is mentioned in the following verses also.

"நீடிய விழியினாலும் நின்ற நாக்குறிப்பினாலும்
வாடிய மேனியினாலும் மலமொர நீரினாலும்
கூடிய வியாதிதன்னைச் சுகம் பெற அறிந்து சொல்லே".

"தரணியுள்ள வியாதி தன்னை யட்டாங்கத்தால்
தானறிய வேண்டுவது யேதா வென்னில்
திரணியதோர் நாடி கணகள் சத்தத்தோடு,
தேகத்தினது பரிசம் வருணம் நாக்கு,
யிரண மல மூத்திரமா மிவைக ளெட்டும்
யிதம்படவேதான் பார்த்துக் குறிப்புங் கண்டு
பரணருளால் பெரியோர்கள் பாதம் போற்றிப்
பண்பு தவறாமல் பண்தஞ் செய்வீரே"

- அகத்தியர் குணவாகடம்

“தொகுக்கலுற்று அட்டவிதைப் பரீட்சை தன்னைத்

துலக்கமுறம் பண்டிதரே தெளிவாகப்

பகுக்கரிய நாடியை நீ படித்துப் பாருப்

பகர்கின்ற வார்த்தையைப் பார் நாவைப் பாரு,

வகுக்கரிய தேகமெனத் தொட்டுப் பாரு,

வளமான சரீரத்தின் நிறத்தைப் பாரு,

சகிக்கரிய மலத்தைப் பார் சலத்தைப் பாரு

சார்ந்த விழிதனைப் பார்த்து தெளிவாய்க் காணே.”

- அகத்தியர் வைத்திய வல்லாதி - 600

Azhal Keel Vaayu in relation with Ennvagai thervugal

1. Naadi (Pulse)

உடலில் உயிர் தரித்திருப்பதற்குக் காரணமான சத்தி எதுவோ அதுவே தாது அல்லது நாடி எனப்படும்.

“நாடி என்றால் நாடியல்ல, நரம்பில் தானே

நலமாகத் துடிக்கின்ற துடிதானுமல்ல

நாடி என்றால் வாத பித்த சிலேற்பனமுமல்ல

நாடி எழுபத்தீராயிரந் தானுமல்ல

நாடி என்றால் அண்ட பேரண்டமெல்லாம்

நாடி எழுவகைத் தோற்றத்துள்ளாய் நின்ற

நாடியதுயா ராய்ந்து பார்த்தாரானால்

நாடியுறும் பொருள் தெரிந்து நாடு வாரே”.

- பதினெண் சித்தர் சதக நாடி நூல்

Naadi is responsible for the existence of life and can be felt one inch proximal to the wrist on the radial side by means of palpation with the timps of index, middle and ring fingers corresponding vaatham, piththam and kabam respectively.

The three humours vaatham, piththam and kabam exists in the ratio 1: ½ : ¼ normally. Derangement in these ratios leads to various disease entities.

The three "Uyir thathukal" are formed by the combination of three nadigal with three vaayu.

a)	Edakalai	+	Abaanan	=	Vaatham
b)	Pinkalai	+	Piranan	=	Piththam
c)	Suzhumunai	+	Samanan	=	Kabam

In Azhal Keel Vaayu the following types of naadi can be seen commonly. They are,

a) Vaatha piththam

b) Vaatha kabam

c) Pithatha vaatham

d) Pithatha kabam

e) Kaba vaatham

II. Sparism

In case of Azhal Keel Vaayu mild warmth noticed over the affected joint.

III. Naa

In case of Azhal Keel Vaayu no abnormality is seen in Naa

IV. Niram

In case of Azhal Keel Vaayu no abnormality is seen in Niram

V. Mozhi

In case of Azhal Keel Vaayu no abnormality was ruled out.

VI. Vizhi

In case of Azhal Keel Vaayu no abnormality is seen in vizhi.

VII. Malam

In case of Azhal Keel Vaayu constipation was reported in some cases.

VIII. Moothiram

Collection of urine for the determination of Neerkuri and Neikuri, a special diagnotic method.

Neerkuri and Neikuri

“அருந்து மாறிரதமும் அவிரோமதாய்

அ.ங்கல அலவர்தல் அகாலவூன் தவிர்ந்தழற்

குற்றள வருந்தி உறங்கி வைகறை

ஆடிக் கலசத் தாவியே காதுபெய்

தோரு முகூர்த்தக் கரைகுட் படுநீரின்

நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”.

- சித்த மருத்துவாங்க சுருக்கம்

Prior to the day of urnine examination the patient is instructed to take a balanced diet and quantities of food must be proportionate to his routine in take. The patient could have no disturbed sleep. After wake up in the morning, the first urine voided is collected in a clear wide mouthed glass dish or Hina Clay container and is subjected to analysis of "neerkuri and neikuri" with in one and a half an hour. Then, neerkuri is to be found out by Neerkuri.

"வந்த நீர்க்கரி யைடை மணம் நுரை எஞ்சலென்

றைந்திய லுளவை யறைகுது முறையே"

- சித்த மருத்துவாங்க சுருக்கம்

Voided urine has the following characters

1. Niram - Colouration
2. Edai - Specific gravity
3. Manam - Smell
4. Nurai - Frothy nature
5. Enjal - Quantity of urine voided

Apart from these, the frequency of urination, abonormal constituents, such as sugar, protein, presence of blood, pus, renal calculus crystals also be to found out.

In Azhal Keel Vaayu patient straw or hay coloured urine is noticed.

Neikuri:

The speciality of neikuri is stated in the following verse.

"ஐயக்குறி கொடுவட வாணிழ லமர்ந்தோர்

கைக்குறி தெரித்த நங்கடவுளைத் துதித்தே

மெய்க்குறி நிறந்தொனி விழி நாவிருமலம்

கைக்குறி முழவதூ உங்கற்றார் தம்மினும்

பொய்க்குறி மெய்க்குறி புகலுமெ வர்க்கும்

நெய்க்குறி யதனை யிந்நீணிலத்து ரைப்பபோம".

- சித்த மருத்துவ நோய் நாடல் நோய் முதனாடல் திரட்டு

The Process of dropped gingely oil indication

"நிக்குறிக் குரைத்த நிருமா ண நீரிற்

சிறக்க வெண்ணெய் யோர் சிறுதுளி நடுவிடுத்

தென்றத் திறந்தொலி யேகாதமைத்ததி

னின்றதிவலை போம் நெறிவிழியறியவும்

சென்றது புகலு செய்தியை யுணரே"

- சித்த மருத்துவ நோய் நாடல் நோய் முதனாடல் திரட்டு

The collected specimen as said above is to be analysed by following method. The specimen is kept open in a glass dish or hina clay container. It is to be examined under direct sunlight, without any shaking of the vessel. Then add one drop of gingely oil by at a distance of ½" or ¾" height observe cleanly the direction it spreads with in few minutes, and conclude the diagnosis as follows.

"அரவென நீண்டின அ∴தே வாதம்

ஆழி போல் பரவின் அ∴தே பித்தம்

முத்தொத்து நிற்கின் மொழீவதென் கபமே

ஆரவில் ஆழியும் ஆழியில் அரவும்

அரவில் முத்தும் ஆழியில் முத்தும்".

- சித்த மருத்துவ நோய் நாடல் நோய் முதனாடல் திரட்டு

Paruvakaalm (Seasonal Variation):

Sl.No	Kalam	Kuttram	State of Kuttram	Suvai
1.	Kaar Kaalam (Aavani – Puratasi) (Aug 16 – Oct 15)	Vaatham↑↑ Piththam↑	Vettrunilai Valarchi Thannilai Valarch	Enippu Pulippu Uppu
2.	Koothir kaalam (Iypasi – Karthigai) (Oct 16 – Dec 15)	Vaatham (-) Piththam ↑↑	Thannilai Adaithal Vettrunilai Valarchi	Enippu Kaippu Thuvarppu
3.	Munpanikaalam (Markazhi – Thai) (Dec 19 – Feb 15)	Piththam (-)	Thannilai Adaithal	Enippu Pulippu Uppu
4.	Pinpanikaalam (Masi – Panguni) (Feb 16 – Apr 15)	Kabam ↑	Thanniklai Valarchi	Enippu Pulippu Thuvarppu
5.	Elevenil kaalam (Chithirai – Vaikasi) (Apr 16 – Jun 15)	Kabam ↑↑	Vetrunilai Valarchi	Kaippu Karppu Thuvarppu
6.	Mudhuvenil kaalam (Aani – Aadi) (Jun 16 – Aug 15)	Vaatham ↑ Kabam (-)	Thannilai Valarchi Thannilai Adaithal	Enippu

Thinai (Geographical Distribution)

It is divided in to five types.

1. Kurinji : Mountain regions and surroundings
2. Mullai : Forest regions and surroundings
3. Marutham : Cultivating regions and surroundings
4. Neithal : Sea and coastal region
5. Palai : Desert land only

Geographical Distribution play a vital role in altering Mukkutrams. Vaatha disease is prominent in Mullai and Naithal thinai.

Udal Kattugal

Our body consists of seven udal kattugal. It gives strength and structure to our body.

Sl.No	Udal kattugal	Functions
1.	***Saaram***	It gives strength to the body and mind
2.	***Senneer***	Saram after absorption is converted into senneer. It is responsible for knowledge strength, boldness and healthy complexion.
3.	***Oon***	Gives structure and shape to the body and is responsible for the movements of the body.
4.	***Kozhuppu***	Lubricates the organs and proceed on its own works.
5.	***Enbu***	Protects the vital organs and used for movements and nominates body structure
6.	***Moolai***	Present inside the bones and it gives strength and maintains the normal condition of the bone.
7.	***Sukkilam (or) Suronitham***	Responsible for the reproductive function of species.

Sl.No	Udal Kattugal	Increased Conditions	Decreased Conditions
1.	**Saaram**	Leads to disease identical to the increase in kapha like loss of appetite, excessive salivation	Loss of weight, tiredness, dryness of skin, laziness, diminished activity of the sense organs
2.	**Senneer**	Boils and tumous in different parts of the body, splenomegaly Colic pain, increased blood pressure, reddish eye and skin, jaundice, leprosy, haematuria etc.	Tiredness, Lassitude, anaemia
3.	**Oon**	Tumours or extra growth around the neck, face, abdomen, thigh, genitalia etc.	Muscle wasting
4.	**Kozhuppu**	Identical to that of increased oon associated with dysponea and loss of activity	Pain
5.	**Enbu**	Strong bones and teeth	Weak bones, teeth, nails and hairs
6.	**Moolai**	Heaviness, swollen eyes, swollen phalanges, oliguria and non – healing ulcers	Ostoporosis and shunken eyes
7.	**Sukkilam (or) Suronitham**	Increased sexual activity and signs identical to urinary calculi	Failure to reproduce, pain in genitalia etc.

In the case of Azhal Keel Vaayu out seven Udalkattugal Saaram, Kozhuppu, Moolai, Enbu are commonly affected.

Saaram : Weakness, Pain in Knee joints

Kozhuppu : Morning Stiffness occurs in affected Knee joints

Enbu : Pain occuring in affected knee joints, crepetations

Moolai : Osteo Athritis in Knee Joints

Mukkutram

Human body is influenced by Mukkuttrams (ie) Vaatham, Piththam and Kabam. They are responsible for normal physiological condition of the body.

Vaatham

வாதம்

வாதம் வாழுமிடம்:

- அபானன்
- மலம்
- இடகலை
- உந்தியின் கீழ் மூலம்
- காமக்கொடி
- இடுப்பு
- எலும்பு
- தோல்
- நரம்புக் கூட்டம்
- கீல்கள்
- மயிர்க்கால்
- ஊன்

வாதத்தின் இயற்கை பண்பு:

1. ஊக்க முண்டாக்கல்
2. மூச்சு விடல் வாங்கல்
3. மனமொழி மெய்களுக்குச் செயலைத்தால்
4. மலம் முதலிய பதினான்கு விரைவுகளை வெளிப்படுத்தல்
5. சாரம் முதலிய ஏழு உடற்கட்டுகட்கும் ஒத்த நிகழ்ச்சியைத் தரல்
6. ஐம்பொறிகட்கு வன்மையைக் கொடுத்தல்.

வாதம் - உடலில் செய்தொழில்:

1. உடல்நோதல்
2. குத்தல்
3. பிளத்தல் போற்காணல்
4. நரம்பு முதலிய குன்றல்
5. நடுக்கல்
6. இறுக்கமாதல்
7. நீர்ப்பசையின்மை
8. அசைத்தல்
9. இளைத்தல்
10. குடைச்சல்
11. தடி முதலியவற்றால் அடிப்பட்டது போன்ற வேதனை
12. கை அல்லது கால் இடம் விட்டுப் பெயர்தல் (மூட்டு நழுவல்)
13. உறுப்புத் தளர்ச்சி
14. உறுப்புகள் தொழில் புரியாமல் மரம் போலக்கிடத்தல்
15. மலம், சிறுநீர் முதலியன தீய்தல் அல்லது அடைபடுதல்
16. நீர்வேட்கை
17. கெண்டைக்கால், தொடை முதலியன நொறுங்கிப் போவது போலத்தோன்றல்.
18. எலும்புக்குள் துளைப்பது போன்ற உணர்ச்சி
19. மயிர்க்கூச் செறிதல்
20. கை கால்களை மடக்கவும் நீட்டவும் இயலாதபடி செய்தல்
21. எச்சுவையும் துவர்ப்பாய் இருத்தல் அல்லது துவர்பாக வாய் நீருறல்
22. தோல், கண், மலம், நீர் முதலியன கறுத்துக் காணல்.

வாதத்தின் குணம்:

- வறட்சி (dry)
- குளிர்ச்சி (Cold)
- அணுத்துவம் (Subtle)
- கடினம் (Rough)
- அசைதல் (Unstable)
- இலகு (Light)

வாதத்தின் வகைகள்:

1. பிராணன்:

   மூச்சு விடுதலும் வாங்குதலும் செய்யும்

2. அபானன்:

   மலசலத்தை கீழ் நோக்கி தள்ளும்

3. வியானன்:

   உடலிலுள்ள அசையும் பொருள் அசையாப் பொருள் என்னும் இரண்டிலுமிருந்து உறுப்புகளை நீட்டவும் மடக்கவும் செய்யும்.

4. உதானன்:

   வாந்தியை எழச்செய்யும்.

Vaatham is a kinetic energy, which influences all movements.

Vaatham is located in the abanan, idakalai, faees, spermatic cord, iliac bone, skin, nerves, joints, hair folicless, muscles, bone, ear and thigh.

Sl.No	Name	Locations	Physiologic functions
1.	Piranan	Heart and Lower and Upper Respiratory Tracts	Controls knowledge, mind and five objects of sense useful for breathing
2.	Abanan	Lower abdomen and extremities	Responsible for urination, expels faeces and foetus, dioscharge sperm and menstruation.
3.	Viyanan	Mainly at heart	Responsible for movement of all parts of the body and sued to fell the sensation
4.	Uthanan	Chest	Responsible for vomiting cough, hiccough, sneezing
5.	Samanan	Stomach	Aids for proper digestion. It controls the activity of other vaayus
6.	Naagan	Eyes	Responsible for opening and closing of the eyes
7.	Koorman	Heart and Eyes	Responsible for vision and yawning and controls lacrimation
8.	Kirukaran	Throat	Responsible for salivation nasal secretion and appetite
9.	Thevathathan	Eruvai & Karuvai	For laziness, sleeping and anger defecation, reproduction
10.	Thananjeyan	Nose	Responsible for bloating of the body after death. It escapes on the third day after death through the cranium when it bursts.

In the case of Azhal Keel Vaayu

1. Abanan - Habitual constipation
2. Viyanan - Difficulty in movements of the knee joint
3. Samanan - Due to other vaayus it is affected

Piththam

Piththam is responsible for all the transformation. Piththam is located in urinary bladder, heart, head, umbilicus, abdomen, blood, sweat, skin and eye.

Piththam is classified into 5 types. They are,

1. Anala Piththam - Responsible for digestion of food
2. Ranjaga Piththam - Responsible for colour of blood
3. Sathagam - Located in heart and is responsible for normal activities of the body.
4. Alosagam - Responsible for normal vision
5. Prasagam - Responsible for the complexion of skin.

In case of Azhal Keel Vaayu

1. Sathagam - Difficulty in walking, climbing upstairs, squatting, sitting cross legged (Daily Activities).

Kabam

Stabilizes, maintains and lubricates all movements.

Kabam is foud in samanan, semen, brain, head, tongue, nose, bones, bone marrow, fat, nerves, chest, blood, large intestine, eye,s tomach and pancreas.

Kabam is classified in to 5 types, they are

1.	Avalambagam	:	Heart is the center for avalambagam. It controls all other forms of kabam
2.	Kilethagam	:	Stomach is the center for kilethagam. It give moisture and softness to the ingested food and helps for digestion
3	Bothagam	:	Tongue is the center for Bothagam and it is responsible for the sense of taste
4.	Dharpagam	:	Head is the center for Dharpagam. It gives cooling effect to eyes
5.	Santhigam	:	It lies in the joints and is responsible for the locomotive action of movable bony joints.

In case of Azhal Keel Vaayu,

Santhigam	:	Pain, tenderness in the knee joints, Cripitations present

Humor	Increase	Decrease
Vaatham	Distended abdomen, Constipation, Weakness, Insomnia, Tremors Breathlessness, Blackish discoloration	Body pain, Feeble Voice, Syncope, Diminished capability of brain
Piththam	Yellowish disoloration of eyes, skin, urine and motion Polyphagia, Polydypsia, Burning sensation all over the body, Sleeplessness	Cold, Pallor, Decreased appetite Symptoms associated with growth of kabam
Kabam	Loss of appetite, Excessive salivation, Heaviness, Dyspnoea, Excessive sleeping, Whiteness, Diminished activity	Prominence of bone edges, Dry cough, Lighness, Profuse sweating, Palpitation, Giddiness, Dryness of joints

Relation between Suvai, Panjabootha and Mukkutram

Sl.No	Suvai	Panjabootha	Mukkutram
1.	Enippu (Sweet)	Piruthivi + Appu	Kapha ↑ Vatha ↓ (-) Pitha ↓ (-)
2.	Pulippu (Sour)	Piruthivi + Theyu	Kapha ↑ Pitha ↑ Vatha ↓ (-)
3.	Uppu (Salty)	Appu + Theyu	Kapha ↑ Pitha ↑ Vatha ↓ (-)
4.	Kaippu (Bitter)	Vaayu + Space	Vatha ↑ Kapha ↓ (-) Pitha ↓ (-)
5.	Karppu (Pungent)	Vaayu + Theyu	Vatha ↑ Pitha ↑ Kapha ↓ (-)
6.	Thuvarppu (Astringent)	Piruthivi + Vaayu	Vatha ↑ Kapha ↓ (-) Pitha ↓ (-)

↑ - Valarchi

↓ - Samappaduththal

முக்குற்ற வேறுபாடு (pathophysiology):

Vaatham is mainly responsible for proper locomotor functions. Bones and joints are considered be the vatha place.

In Azhal keel vaayu, vaatha is the first vitiated which has an impact over Vianan and Abaanan (among the types of Vaatham)

Deranged Vianan leads to pain and difficulty in movements while Abaanan leads to constipation.

Along with Vaatham, Kabam is altered from its normal proportion, Santhegam is affected and this leads to abnormality in joints movements.

Atlast piththam is altered with affection in Saathagam as it hinders the desire in locomotion.

கால நிலைகளில் முக்குற்றம் (Three doshams in seasonal variation)

	தன்னிலை வளர்ச்சி	வேற்றுநிலை வளர்ச்சி	தன்னிலை அடைதல்
வாதம்	முதுவேனில்	கார்காலம்	கூதிர்காலம்
பித்தம்	கார்காலம்	கூதிர்காலம்	முன்பனி
கபம்	பின்பனி	இளவேனில்	முதுவேனில்

Vaatham vitiates during muthuvenil ie., during Summer, the environment is hot it leads to dryness, similarly the body is affected by excessive heat and loses its energy through perspiration and the digestion is impaired.

So, in Azhal keel vaayu the disease shows its exacerbation during Muthuvenil kalam.

Udal Vanmai – Body Immunity

The Udal Vanmai is classified in to 3 types. They are,

1. Iyarkkai Vanmai
2. Seyarkai Vanmai
3. Kaala Vanmai

1. Iyarkkai Vanmai :

Natural immunity of the body itself by birth

2. Seyarkai Vanmai:

Improving the health by intake of nutritious food materials, activities and medicines.

3. Kaala Vanmai:

Development of immunity according to age and environment

Seyarkai vanmai often individual is affected in Azhal Keel Vaayu patients

Gnanenthiriyam.

Gnanenthiriyam are Mei, Vaai, Kan, Mooku and Sevi

1. Mei	:	Feels all types of sensation
2. Vai	:	For recognize taste
3. Kann	:	Meant for vision
4. Mooku	:	For recognize smell
5. Sevi	:	For hearing

In case of Azhal Keel Vaayu no abnormalities are seen

Kanmenthriyam

Kanmenthriyam are kai, kaal, vaai, eruvaai and karuvai

1. Kai	:	Majority of normal works done by hands
2. Kaal	:	For Walking
3. Vaai	:	For Speaking
4. Eruvaai	:	For defaecation
5. Karuvaai	:	For reproduction

In case of Azhal Keel Vaayu "Kaal" affected.

நோய் நிதானம் (Differential diagnosis):

Azhal keel vaayu is differentiated from other types of keel vaayu as follows:

1. Vali Keel Vaayu:

It is characterized by excruciating pain and swelling involved in toes, knee joints, hip joints, elbow joints, shoulder joints and associated with systemic disturbances like

dryness of mouth, pyrexia, headache, palpitation, constipation and sweating. In advanced cases it may affect the heart and produce “Thamaraga Vaayu”.

2. Iya Keel Vaayu:

It is characteruized by severe pain in the joints associated with emaciation of the body, anorexia, insomnia, cough, hiccough, vomiting, anamemia and dropsy. The common sites are spinal cord, hip joint and knee joint.

3. Vali Iya keel Vaayu:

It is characterized by pain in the joints associated with effusions of joint fluid and selling, restricted joint movements, pyrexia, fainting, insomnia, especially in knee joint asvmmetrically, lymphadenopathy, generalized malaise, atrophy of the affected limb etc., The affected joint looks like “Fox’s Head”.

Line of Treatment

In Siddha system, the main aim of the treatment is to cure Udarpini (due to Mukkuttram) and Manapini (due to changes in Mukkunam). Treatment is not only for perfect healing but also for the prevention and rejuvenation.

Thiruvalluvar says about physicians duty, study the disease, study the cause, seek subsiding ways and do what is proper and effective.

"நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய் நாடி வாய்ப்பச் செயல்".

"உற்ளானளவும் பிணியளவுங் காலமும்
கற்றான் கருதிச் செயல்"

- திருக்குறள்

So it is essential to know the disease, the aetiology, the nature of the patient, severity of the illness, the seasons and the time of occurrence must be observed clearly.

Line of treatment is as follows:

Kaappu (prevention)

Neekkam (Treatment)

Niraivu (Retoration)

Kaappu: (Prevention)

As per Siddha system even during the time of conception the vinaipayan is transferred into the fertilized embryo, which is aetilogy for certain diseases may be cured not only by medicines but by teaching the following habits.

1. Teaching good moral habits.
2. Avoid Stress and strain.
3. Taking purgatives once in 6 months.
4. Always have good mental thoughts by doing meditation.
5. Yoga

All the patients were also avised to follow Siddhars preventive measures which would give immortality of body and soul, quoted in ***Pathartha Guna Chinthamani*** as follows.

"திண்ண மிரண்டுள்ளெ சிக்க வடக்காமற்
பெண்ணின்பா லொன்றைப் பெருக்காமல் - உண்ணுங்கால்
நீராசுருக்கி மோர் பெருக்கி, நெய்யுருக்கி யுண்பவர்தம்
பேருரைக்கிற் போமே பிணி"

"பாலுண்போம்; எண்ணெய்பெறின் வெந்நீரிற் குளிப்போம் ;
பகற்புணரோம்; பகற்றுயிலோம் ; பயோதரமு மூத்த
ஏலஞ்சேர் குழலியரோ டிளவெயிலும் விருப்போம்
இரண்டடக்கோம் ; ஒன்றைவிடோம் ; இடது கையிற் படுப்போம்
மூலஞ்சேர் கறி நுகரோம் மூத்த தயிர் உண்போம் ;
முதனாளிற் சமைத்தகறி யமுதெனினு மருந்தோம் ;
ஞாலந்தான் வந்திடினும் பசித்தொழிய வுண்ணோம்
நமனாக்கிங் கேதுகவை நாமிருக்கு மிடத்தே."

“உண்பதிரு பொழுதொழிய மூன்று பொழுதுண்ணோம் ;
உறங்குவதி ராவொழியப் பகலுறக்கஞ் செய்வோம் ;
பெண் கடமைத் திங்களுக்கோர் காலன்றி மருவோம் ;
பெருந்தாக மெடுத்திடினும் பெயர்த்து - நீரருந்தோம்”
மண் பரவு கிழங்குகளிற் கருணையின்றி புசியோம்;
வாழையிளம் பிஞ்சொழியக் கனியந்தல் செய்வோம் ;
நண்புபெற வுண்டபின்பு குறநடையுங் கொள்வோம்
நமனார்க்கிங் கேதுகவை நாமிருக்குமிடத்தே”.

“ஆறு திங்கட் கொரு தடவை வமன மருந் தயில்வோம்
அடர் நான்கு மதிக்கொருகாற் பேதியுறை நுகர்வோம்
தேறுமதி யொன்றரைக்கோர் தரநசியம் பெறுவோம்
திங்களரைக் கிரண்டுதரஞ் சவளவிருப்புறுவோம்
வீறுசதுர் நாட்கொருகால் நெய்கொருகா லிடுவோம்
நாறுகந்தம் புட்மிவை நடுநிசியின் முகரோம்
நமனார்க்கிங் கேதுகவை நாமிருக்கு மிடத்தே

“பகத்தொழுக்கு மாதரசங் கரந்துடைப்ப மிவை ந்தூட்
படநெருங்கோம் ; தீப மைந்தர் மரநிழலில் வசியோம் ;
சுகப்புணர்ச்சி யசனபக னத்தருணஞ் செய்யோம் ;
துஞ்சலுண விருமலஞ்சை யோகமழுக் காடை
வகுப்பெடுக்கிற் சிந்துகச மிவை மாலை விருப்போம்
வற்சலந்தெய் வம்பிதுர்சற் குரவை விட மாட்டோம்
நகச்சலமு முளைச்சலமுந் தெறிக்குமிட மணுகோம்
நமனார்க்கிங் கேதுகவை நாமிருக்கு மிடத்தே”

- பதார்த்த குண சிந்தாமணி

Neekkam (Treatment)

The aim of treatment is based on

a) To bring the three Thodams in to normal equilibrium state.

b) To treat the patient according to symptoms, by internal medicine

For normalizing three Thodams,

"விரேசனத்தால் வாதம் தாழும்
வமனத்தால் பித்தம் தாழும்
நசிய அஞ்சனத்தால் கபம் தாழும்."

Here Azhal Keel Vaayu, Vaatha humor is deranged mainly. Administration of laxatives or purgatives to the patients brings the vitiate vatha into normal.

Treatment:

The treatment in Siddha system includes not only the removal of signs and symptoms of a disease but also in total uprootment of the diseases.

This is achieved by normalizing the vitiated Mukkuttrams there by retaining body's natural health.

In Azhal keel vaayu, the deranged vaatham is brought to its normal state by purgation (விரேசனம்).

"விரேசனத்தால் வாதந்தாழும்."

- 10 ml of Sithathi ennai was given with Sombu kudineer early morning with empty stomach - Firstday only
- Mirudharsingi chunnam : 65 mg twice- a –day given with ghee after taking food.
- Poochu Ennai : external application over the affected joint.

பத்தியம் (Dietary restrictions)

இச்சாபத்தியத்தில் நீக்கும் பொருள்கள்

கடுகு நற்றிலத் தெண்ணெய் கூழ்பாண்டங்கள் கடலை

வடுவ தாகிய தெங்குமா வருக்கை நற்காயம்

மடிவி லாதவெள்ளுள்ளிகொள் புகையிலை மதுபெண்

இடறு பாகலோ டகத்தி நீக்கிடலிச் சாபத்தியம்

- சித்த மருத்துவாங்க சுருக்கம்

கடுகு, எள்நெய், கல்யாண பூசனிக்காய், கள், கடலை, தேங்காய், மாங்காய் , பலா, காயம் , உள்ளிப்பூண்டு, கொள் , புகையிலை, பெண்கள் சேர்க்கை, பாகல், அகத்தி இவைகளை இச்சாபத்தியத்தில் நீக்க வேண்டும்.

"புளிதுவர் விஞ்சும் கறியால் பூரிக்கும் வாதம்"

புளிப்பு, துவர்ப்பு சுவையுள்ள உணவு வகைகளை நீக்க வேண்டும்.

Implementation of special medicine methods to the Needy (Sirappu Maruthuva Parigara Muraigal – (Yogasanas and Thokkanam)

MODERN ASPECTS

Osteo Arthritis

Introduction

Osteoarthritis can be defined as a gradual loss of articular cartilage, combined with thickening of the subchondral bone; bony outgrowth (osteophytes) at joint margins; and mild, chronic nonspecific synovial inflammation.

Epidemiology:

Osteoarthritis is by far the most common joint disorder throughout the world, and is one of the leading causes of disability in the elderly.

Although the disease commonly affects the cervical and lumbar spine, most epidemiologic studies report that it has a predilection for weight – bearing joints in the leg and certain joints in the hand.

The prevalence of Osteoarthritis in all joints correlates strikingly with age. One – third of people aged 65 years and older have knee Osteoarthritis that is evident by radiograph. Before the age of 50, men are more likely to have Osteoarthritis than women, but after age 50, it is women who are more likely to be affected.

- ☆ Osteoarthritis is already one of the ten most disabling diseases in developed countries.

- ☆ Farming 1-9 years increases the risk of osteoarthritis 4 times, farming 10 or more years increases the risk 9 times.
- ☆ Worldwide estimates are that 10% of men and 18.0% of women aged over 60 years have symptomatic osteoarthritis.
- ☆ 80% of those with osteoarthritis will have limitations in movement, and 25% cannot perform their major daily activities of life.

Local Factors:

Excess Weight :

Population – based studies of osteoarthritis consistenly have shown that overweight people are at greater risk of developing knee osteoarthritis than average – weight controls.

Obese women are four to five times more likely to have knee osteoarthritis than persons of average weight. Studies suggest that obese people with knee osteoarthritis are at greater risk than thinner people for disease progression. Weight reduction is likely to lesson the symptoms of knee Osteoarthritis.

Although the association with body weight is not as strong for hip osteoarthritis as it is for knee osteoarthritis, overweight people appear to be at increased risk of osteoarthritis in all weight bearing joints, including hip osteoarthritis. Surprisingly, there is also a positive association between obesity is a systemic risk factor for osteo arthritis.

Injury and Occupation:

Major acute knee injuries, including cruciate ligament and meniscal tears, are common causes of knee osteo arthritis. Osteoarthritic changes have been reported in up to 89% of people after meniscectomy. Most people who have experienced complete anterior curciate ligament rupture will develop knee osteo arthritis.

Osteo arthritis is associated with a variety of sport activities including running (hip osteoarthritis), Soccer playing (knee and hip osteoarthritis), and Football playing (knee osteoarthritis).

Pathogenesis

Normal Articular Cartilage

Normal cartilage has two main components. One is the extracellular matrix, which is rich in collagens (mainly types II, IX and XI) and proteoglycans 9 mainly aggrecan.

Aggrecan is a central core protein bearing numerous glycosaminoglycans chains of chondroitin sulfate and keratan sulfate, all capable of retaining water.

The second component consists of isolated chondrocytes, which lie in the matrix. The matrix components are responsible for the tensile strength and resistance to mechanical loading of the articular cartilage.

Passage of Normal Cartilage to Aging cartilage

Several structural and biochemical changes involving the non collagenous component of the matrix occur during aging. These changes alter biochemical properties of the cartilage that are essential for the distribution of forces in the weight-bearing zone.

Glycosaminoglycans are modified qualitatively; they become shorter as the cartilage ages. The concentration of type 6 keratan sulfate increases during aging, to the detriment of type 4 keratan sulfate.

These quantitative and qualitative change in proteoglycan reduce the capacity of the molecules to retain water. Thus, aging cartilage contains less water, which alters the biochemical properties of the cartilage. Fissures that develop aging are due mainly to stress fractures of the collangen network.

Osteoarthritic joints

Osteoarthritic joints have abnormal cartilage and bone, with synovial and capsular lesions.

Macroscopically, the most characteristic elements are

- ☆ Reduced joints space.
- ☆ Formation of osteophytes (protrusion of bone and cartilage) mostly at the margins joints.
- ☆ Sclerosis of the subchondral bone

These changes are the result of several histologic phases

Phase 1: edema and microcracks.

The first recognizable change osteoarthritis is edema of the extracellualr matrix, principally in the intermediate layer. The cartilage loses its smooth aspect, and microcracks appear. There is a focal loss of chondrocyting with areas of chondrocute proliferation.

Phase 2: fissuring and pitting.

The microcrack deepen perpendicularly in the direction of the forces of tangential cutting and along fibrils of collagen. Vertical form in the subchondral bone cartilage. Clusters of chondrocytes appear around these clefts and at the surface.

Phase 3: erosion

Fissures cause fragements of cartilage to detach and "fall" into the articular cavity osteocartilaginous loose bodies and uncovering the subchondral bone. Subchondral microcysts develop These fragement cause the mild synovial inflammation of OA.

The resulting inflammation often is more focal than inflammation that occurs during rheumatoid synovitis. Histologically, OA synovitis is characterized by mild, nonspecific lymphoplasmocytic and histiocytic infiltration.

There is sclerosis of the subchrondral bone, due to the apposition of small strips of new bone. Osteophytes form around the zone, their surface covered with fibrilar cartilage. Subchondrol sclerosis increases with disease progression. Specific changes in architecture of he subchondral trabecular bone are due to accelerated bone turnover.

AETIOLOGY

Aetiology

The causes of osteoarthritis are varied.

Endocrine:

People with diabetes may be prone to osteoarthritis. Other endocrine problems also may promote development, including acromegaly, hypothyroidism, hyperparathyroidism, and obesity.

Post traumatic:

Traumatic causes can be further divided into macrotrauma or microtrauma. An example of macrotrauma is an injury to the joint such as bone break causing he bones to line up improperly (mal alignment), lose stability, or damage cartilage. Microtrauma may occur over time (chronically). An example of this would be repetitive movements or the overuse noted in several occupations.

Inflammatory joint disease:

This category would include infected joints, chronic gouty arthritis, and rheumatoid disease.

Metabolic:

Diseases causing errors of metabolism may cause osteoarthritis. Examples include padget disease and Wilson disease.

Congenital or developmental:

Abnormal anatomy such as unequal leg length may be a cause of osteoarthritis.

Genetic:

A genetic defect my promote breakdown of the protective architecture of cartilage. Examples include collagen disturbances such as Ehlers-Danlos syndrome.

Neuropathic:

Diseases such as diabetes can cause nerve problems. The loss of sensation may affect how the body knows the position and condition of the joints or limbs. In other words, the body can't tell when it is injured.

Other:

Nutritional problems may cause osteoarthritis. Other disease such as hemophilia and sickle cell anaemia are further examples.

Secondary Causes of Osteoarthritis

- Calcium deposition.
- Congenital or development
- Endocrine
- Genetic defect
- Infectious
- Metabolic Neuropathic
- Post – traumatic
- Rheumatologic diseases (Other than primary osteoarthritis)

Classification of Osteoarthritis

Osteoarthritis is a common cartilage disease and a major cause of pain and disability in older adults. Primary osteoarthritis results from changes caused by specific inflammatory or metabolic conditions, while secondary osteoarthritis is caused by other conditions that damage cartilage.

Primary Osteoarthritis	Secondary Osteoarthritis
Usually limited to one or a small number of joints	May be limited to a small number of joints if injury – related, or may be in joints throughout body, if disease related
No specific inflammatory or metabolic condition known to be associated with arthritis is present	Conditions that cause damage to cartilage are present, such as; ➢ Inheritied diseases of iron, calcium or coper storage such as hemochromatosis, hyperparathyroidism, or Wilson's diseases. ➢ Neurologi disorders that result in the loss of nerve function. ➢ Congenital diseases that cause an imbalance in the joints
No history of specific injury or trauma	History of injury to joints, such as fractures and tears, or history of trauma to joints, such as repetitive heavy lifting or kneeling

Signs and symptoms

The most common signs and symptoms of osteoarthritis are

- Joint soreness after periods of overuse or inactivity.
- Stiffness after period of rest that goes away quickly when activity resumes.
- Morning stiffness, which usually lasts no more than 30 minutes.
- Pin caused by the weakening of muscles surrounding the joint due to inactivity.
- Joint pain is usually less in the morning and worse in the evening after a day's activity
- Deterioration of coordination, posture and walking due to pain and stiffness.

Diagnosis

There is no single sign, symptom, or test result that allows a definitive diagnosis of osteoarthritis. Instead, the diagnosis is based on a consideration of several factors, including the presence of the characteristic signs and symptoms of osteoarthritis and the results of laboratory tests and x-rays.

Diagnostic criteria

Formal criteria and helpful for diagnosing osteoarthritis in knee joints. The criteria for osteoarthritis of the knee include the presence of knee pain plus at least three of the following characteristics:

- Age greater than 50 years
- Morning stiffness lasting less than 30 minutes
- Crackling or grating sensation (crepitus)

- Bony tenderness of the knee
- Bony enlargement of the knee
- No detectable warmth of the joint to the touch.

Complications list for Osteoarthritis:

The list of complications that have been mentioned in various sources for Osteoarthritis includes;

Life style effects include

- Depression
- Anxiety
- Feelings of helplessness
- Limits on daily activities
- Job limitations
- Loss of everyday family joys and responsibilities
- Rapid, complete breakdown of cartilage resulting in loose tissue
- Material in the joint (Chrondrolysis).
- Bone death (Osteonecrosis).
- Stress fractures (hairline crack in the bone that develops).
- Gradually in response to repeated injury or stress
- Bleeding inside the joint
- Infection in the joint
- Rupture of the tendons and ligaments in the joint.
- Pinched nerve (in osteoarthritis of the spine).

ANATOMY OF THE KNEE JOINTS

This hinge joint is formed by the condyles of the femus, the condyles of the tibia and the posterior surface of the patella. The anterior part of the capsule consists of the tendon of the quardriceps femoris muscles which also supports the patella.

Intracapsular structures include two cruciace ligments which cross each other, extending from the intercondylar notch of the femus to the intercondylar eminence of the tibia. They help to stabilize the joint.

Semilunar cartilages of menisci are incomplete discs of white fibro cartilage lying on top of the articular condyles of the tibia. They are wedge –shaped, being thicker at their outer edges. They help to stablize the joint by preventing lateral displacement of the bones.

Bursae and pads of fat are numerous. They prevent friction between a bone and a ligament or tendon and between the skin and the patella. Synovial membrane covers the circiate ligaments and the pads of fat.

The menisci are not covered with synovial membrane because they are weight –bearing. The most important strengthening ligaments are the medial and lateral collateral ligaments.

ARTICULAR CARTILAGE

The ends of the bones in a snovial joint are covered with a layer of articular cartilage. This is an avascular tissue that consists of cartilage cells 9chondrocytes) embedded in a thick matrix of proteoglycans, water, type II collagen and smaller amounts of other proteins.

Although there is no cell division in normal cartilage, chondrocytes are metabolically active cells that are responsible for synthesis and turnover of cartiage matrix throughout life. The matrix consists of meshwork of type II collagen fibrils that run through a hydrated 'gel' of proteoglycan molecules, the most important of which is aggrecan.

Aggrecan consists of a core protein, to which several glycosaminoglycan (GAG) side – chains are attached. GAGs consist of long chains of disaccharide repeats, in which the disaccharide consists of one ordinary sugar linked to an amino sugar.

The most important GAGs in aggrecan are chondroit in sulphate (glucoronic acid and sulphated N-acetygalactosamine) and keratan sulphate (galactose and sulphated N-acetlglucosamine). Cartilage also contains hyaluronan, a long GAG consisting of multiple glucoronic acid and N- acetylgalactosamine disaccharide repeats.

Hyaluronan binds several aggrecan molecules by interacting with a domain at the N-terminus of the core protein along with a small glycoprotein called link protein that acts to stabilize the complex.. Large complexes of a aggrecan and hyaluronan can form in catilage with a total molecular weight in excess of 100 million.

INTEGRITY OF THE KNEE JOINT

1. Lateral motion of the knee joint in extension is controlled by capsule, collateral ligaments and cruciate ligaments, in flexion, by the same structures minus the fibular collateral ligament.
2. Rotatory motion of the knee joint in extension is controlled by the capsule, collateral ligaments and cruclate ligaments, in flexion, by the same structures minus the fibular collateral ligament.
3. Forward gliding of the tibia on the femur is controlled by the anterior curciate ligament and the quadriceps.
4. Backward guiding of the tibia on the femur is controlled by the posterior cruciate ligament and the posterior capsule.
5. Lateral gliding of the tibia on the femur is controlled by the tibia, intercondylar spine and the femoral condyles with the aid of all the ligaments.
6. Hyperextension is controlled by both collateral ligaments, both cruciate ligaments, both menisci, the posterior aspect of the articular capsule, the oblique popliteal ligament and the architecture of the femoral condyles.
7. Hyperflexion is controlled by both cruciate ligaments, both menisci, the femoral attachment of the posteior aspect of the capsule, the femoral attachement of both heads of gastrocnemius muscle, and the bony structure of the condyles of the femur and the tibia.
8. The menisci cushion hyperextension and hyperflexion. The tibial collateral ligaments is closely related to the medial meniscus but there is no strong fibrous

tissue attachment between them. The tibial collateral ligament glides forward and backwards in extension and flexion.

Aggrecan has a strong negative charge because of the sulphate any hydroxyl groups in the GAG residues: as a consequence, it binds large numbers of water molecules to assume a shape that occupies the maximum possible volume available The expansive force of the charged and hydrated aggrecan, combined with the restrictive force of the collagen meshwork, gives articular cartilage excellent shock – absorbing properties.

With ageing, the amount of chondroitin sulphate in cartilage decreases, whereas that of keratan sulphate increases. The end result is a reduction in water content and impairment of cartilage's shock absorbing properties. Age – related charges in cartilage differ from those found in osteoarthritis, where there is abnormal chondrocyte division, loss of proteoglycan from matrix and an increase in water content.

Cartilage matrix is constantly being turned over, and in health a perfect balance is maintained between synthsis and degradation of matrix components. Matrix degradation is throught to be mediated by proteolytic enzymes such as aggrecanse and matrix metalloproteinases that degrae the core protein of aggrecan and other matrix proteins. Other enzymes termed glycosidases degrade the GAG side – chains.

The importance of this system is emphasized by the occurrence of a group of diseases, termed mucopolysaccharidoses, in which genetic mutation in glycosidases occur, resulting in excessive accumulation of GAGs in various tissues.

The mechanisms by which proteoglycan turnover is regulated in normal cartilage are poorly understood, but pro – inflammatory cytokines such as interleukin – 1 (IL –1) and tumour necrosis factor (TNF) which are involved in joint inflammation are known to upregulate production of aggrecanase, metalloproteinases and other enzymes that cause matrix degradation, thereby promoting cartilage damage.

This is offset by upregulation of inhibitors of proteinases in cartilage, called tissue inhibitors of metalloproteinases (TIMP), which oppose the effects of degrading enzymes and protect against matrix degradation.

Zones of articular cartilage:

1. Superficial Layer (tangential Zone)

Makes up 10% of cartilage

Consists of 2 sub – zones

i. Fibrilar Sheet / Lamina Splendens is the more superficial layer.

Clear film consisting of a sheet of small fibrils with little polysaccharide and no cells.

ii. Cellular layer with flattened chondrocytes.

Flat chjondrocytes and collagen fibers are arranged tangentially to the articular surface.

Thinnest layer, with highest content of collagen and the lowest concentration of proteoglycans.

Collagen (type IX) is arranged at right angles to adjacent bundles and parallel to the articular surface.

Subsequently has greatest ability to resist shear stresses and serves as a gliding surface for joint.

May also function to limit passage of large molecules between synovial fluid and cartilage.

Superficial zone is the first to show changes of osteoarthritis.

2. Transitional Layer.

- This zone is involves transition between the shearing forces of surface layer to compression forces in the cartilage layers.
- Composed almost entirely of proteoglycans
- Spherical chondrocytes.
- Less strongly bound

3. Deep radial layer:

- Largest part of the articular cartilage
- It distributes loads and resists compression
- Collagen fibers and chondrocytes are perpendicular to the subchondral plate

4. Calcified Cartilage Layer:

- Contains the tidemark layer
- Tidemark is pasophilic line which straddles the bound between calcified and uncalcified cartilage.
- Separes hyaline cartilae from subchlodral bone
- Type X collagenm is present mainly in the calcified cartilage layer and in hypertrophic zone of the growth plate.

PROTOCOL

1. BACKGROUND

Osteoarthritis is a non - inflammatory disorder of movable joints characterized by detorioration of articular cartilage and formation of new bone at the joint surfaces and margins. This disorder is also known as degenerative joint disease. Osteoarthritis at Knee joints is the leading cause of chronic disability in developed countries. The distribution of osteoarthritis in men & women is similar. Ages between 40-65Yrs commonly affected. In this age group, the prevalence is 68%.

In Siddha system, *Azhal keel vaayu* is the equivalent to osteoarthritis.

According to Siddha literature, *Azal keel vaayu* is one of the types of *keel vaayu* diseases. *Keel vaayu* disease is one among the 80 *Vaatha diseases* that is called *Santhuvaatham*. It is also called as *Mootuvali* and *Santhusoolai.*

About the disease

‘‘பித்த கீல்வாயு தன்னாற் கீல்முட்டுவீங்கிச்
சித்தர் செய்மருத்துவச் சீர்படாத தன்மைதாகித்
தத்தான காய்ச்சல் கண்டு சாலவே தனைதான தந்தே
மெத்தறு சிகிச்சை தன்னதல் மென்மேல் நீக்குமப்பா’’

- சபாபதி கையேடு

இது, வளிக்குற்றம் தன்னிலையில் மிகுந்துள்ளபோது அழல் குற்றத்தைத் தூண்டக் கூடிய உணவு, செய்கை முதலியவற்றால் பிறக்கும் நோயாம். இந்நோயில், முட்டிகளில் உண்டாகும் வீக்கம் நாளுக்குநாள் பெருத்துக் கொண்டே வந்து, மிகுந்த தீக்குற்றத்தால் கீல்களினிடையேயுள்ள பசை வறண்டு பசையற்றுக் கீல் அசையும் போதெல்லாம் நட்டையுடைதலும் "கலுக்" "கலுக்" கென்ற ஓர் ஒலி உண்டாவதுமாய் இருக்கும். சிலவேளைகளில் கீலுக்குக் கீல் கூடி ஒட்டிக்கொண்டு ஒரு கழிபோல மடக்க முடியாமலே நின்று விடுவதும் உண்டு. இந்நோய்க்கு சிறுசுரமும் வரும்.

It is characterized by swelling of joints associated with severe pain and pyrexia. Since it is not quickly responding to medicine the prolongs medical care is said to be essential. As piththa increases, kaba (mucuous) in the joint decrease and hence dryness occur. So, during flexion of the joint crepitation is produced.

In Siddha text, *Korakkar Santhraregai* there is a preparation named *Mirutharsingi Chunnam* which is indicated for vaatham 80. In *Ugimunivaithyakaaviam* text, there is a external drug called *poochu ennai* which is indicated for *muzhangal piddipu.*

So, I would like to estimate their efficacy for the treatment of *Azhal keel vaayu.*

2. AIMS

(a) Primary aim

To estimate the efficacy of *Mirutharsingi Chunnan* and *Poochu ennai* in the treatment of *Azhal keel vaayu*

(b) Secondary aim

To find out the side - effects of the drugs, if any.

3. POPULATION & SAMPLE

The population consists of all patients with *Azhal keel vaayu* satisfying the inclusion and exclusion criteria mentioned below. The sample consists of patients attending the IPD/OPD of the Ayothidoss Pandithar Hospital of the National Institute of Siddha, Chennai – 47.

4. SAMPLE SIZE

The trial size will be 50 patients

5. INCLUSION CRITERIA

1. Aged between 40 and 65yrs.

2. Willing to give blood specimen & willing to take X-ray for the investigation when required.

3. Willing to be in – patient for 48 days, or willing to attend OPD once in 8 days for 48 days.

6. EXCLUSION CRITERIA

1. Hypertension
2. Stomach carcinoma
3. Peptic Ulcers
4. Hypercholestremia
5. Cardiac ailments
6. Severe neurological disorders.

7. WITHDRAWAL CRITERIA

1. Any drastic changes occurring in haematological parameters & in urine analysis.

2. Development of any gastro-intestinal disturbances.

1. Occurrence of any other serious illness.

8. TRIAL DRUG & DURATION

Purgation: *Siththathi ennai*	-	10 ml with *sombukudineer* (at early morning) – First day on admission
Mirutharsingi chunnam	-	65 mg with Ghee – twice a day, after food
Poochu ennai	-	q.s. - External application
Trial treatment period	-	48days.

9. TESTS & ASSESSMENTS

(a) Clinical assessment

Pain, swelling, warm, redness, tenderness, morning stiffness, crepitations, periarticular muscle atrophy, movements of the joints, measurements of the joints in both knee joints.

(b) Investigations

1. Blood test: TC, DC, ESR, Hb, Blood urea, Serum cholesterol, Blood sugar.
2. X-ray findings.

10. CONDUCT

Azhal Keel Vaayu patients satisfying the inclusion & exclusion criteria will be admitted to the trial. Informed consent will be obtained from the patients.

A day before starting trial treatment, cleansing o*f Vaatha Kuttram* by purgation will be carried out. X-ray will be taken before treatment and at the end of the treatment. Lab investigations will be carried out before treatment, on 24^{th} day and at the end of the treatment.

For IP patients, the trial drug will be administered by the doctor. For Op patients, the trial drugs will be issued for 8 days. They will be asked to come to Op with unconsumed medicines and return them. On the 8th day, the trial drug will be given to the patient for another 8 days. At each clinical visit, clinical assessment will be done.

11. FORMS

Form I - Selection proforma - Used before admission of the patients to the trial.

Form II - Assessment proforma - Used once in 8 days during treatment.

12. ANALYSIS

Changes in the proportion of patients before and after treatment for signs and symptoms will be analysed using paired X^2 - test.

RESULTS AND OBSERVATION

Table 1 Gender distribution

Gender	Cases	
	No.	**Percentage**
Male	28	46.7
Female	32	53.3
Total	60	100.0

Observation:

Among the selected 60 patients, the prevalence of the disease was found to be higher in females i.e. 53.3%.

Table 2 Age distribution

Age (years)	Cases	
	No.	**Percentage**
31 – 40	2	3.3
41 – 50	16	26.7
51- 60	28	46.7
61 – 70	14	23.3
Total	60	100.0

Observation:

The prevelance of the disease was found to be higher in the age group 51-60 years.

Table :3 Kaalam (Life span)

Kaalam	Cases	
	No.	Percentage
Vaathakaalam (up to 33 yrs)	0.0	0.0
Piththaakaalam (34-66 yrs)	54	90.0
Kaba Kaalam (above 67 yrs)	6	10.0
Total	60	100.0

Observation:

Out of 60 cases, 90% of the cases were found to be in Piththakaalam i.e. between 33 –66 years.

4. Paruvakaalam

Among 60 patients, 42 (70%) cases were admitted to the trial in Koothirkaalam and the remaining 18 (30%) cases were admitted in Munpanikaalam

No case was admitted in Kaarkaalam, Pinpanikaalam Elavenil Kaalam, Muthuvenil Kaalam.

5. Diet

Diet	Cases	
	No.	**Percentage**
Vegetarian	6	10.0
Non-Vegetarian	54	90.0
Total	60	100.0

Observation:

Out of 60 cases 90% of cases were non-vegetarian 10% of cases vegetarian.

6. Thinai:

Most of the cases (90%) were reported from Neithal thinai.

The remaining 10% of cases reported from Marutha Nilam.

6. Socio economic status:

Socia Economic Status	**Cases**	
	No.	**Percentage**
Poor	18	30.0
Middle class	40	66.7
Rich	2	3.3
Total	60	100.0

Observation:

The incidence of the disease was found to be higher in middle class (66.66%).

7. Disturbances in Vaatham:

Out of 60 cases observed viyaanan and samanan were affected in almost all the cases while abanan affected in 5 cases.

8. Disturbances in Piththam:

Out of 60 cases, Saathagam was affected in almost all cases.

9.Disturbances in Kabam:

Only Santhigam was affected in all the 60 cases.

10. Envagai Thervugal (Siddha Diagnostic Parameters)

Almost all cases affected were observed altered naadi and sparism, malam in all 5% and vizhi in 8.3%.

11. Naadi

Naadi	**Cases**	
	No.	**Percentage**
Vaatha piththam	44	73.3
Vaathakabam	5	8.3
Piththavaatham	8	13.3
Piththakabam	2	3.3
Kabavaatham	1	1.7
Kabapiththam	0	0.0
Total	60	100.0

12. Neikuri

Spreading Pattern	**Cases**	
	No.	**Percentage**
Aravenaneendathu	11	18.3
Aazhipolparaviathu	0	0.0
Muththupol Ninrathu	49	81.7
Total	60	100.0

13. Udal Thathukkal:

Enbu was affected in all 60 cases (100%) .

Saaram also affected in all 60 cases (100%)

14. Disturbances in Kanmenthiriyam:

Kaal was affected in all 60 cases (100%)

15. Duration of Illness:

Duration of Illness (month)	**Cases**	
	No.	**Percentage**
Up to 6 months	37	61.7
7 – 12 months	20	33.3
13 –18 months	3	5.0
19 – 24 months	0	0.0
25 – 30 months	0	0.0
Above 30 months	0	0.0
Total	60	100.0

16. Involvement of Knee Joints

Knee Joints	**Cases**	
	No.	**Percentage**
Both Knee Joints	50	83.3
Right Knee joint only	8	13.3
Left Knee Joint only	2	3.3
Total	60	100.0

17. Clinical Features

Clinical Feature	**Cases**	
	No.	**Percentage**
Pain	60	100.0
Swelling	60	100.0
Warmth	60	100.0
Tenderness	60	100.0
Morning stiffness	60	100.0
Crepitation	60	100.0
Periarticular muscle atrophy	0	0.0
Instability	7	11.7
Deformity	14	23.3
Restricted movements	60	100.0

18. Precipitating Factors:

Factors	**Cases**	
	No.	**Percentage**
Obesity	8	13.33
Menopause	30	50.0
Increased house maintenance	17	28.33
Occupational related	13	0.0
Diabetes Mellitus	10	16.7
History of Trauma	1	1.7
H/o. Injury	1	1.7
H/o. Fractures	1	1.7
H/o. Chikungunya	1	1.7

19. Occupational:

Occupation	**Cases**	
	No.	**Percentage**
Clarical worker	15	25.0
Teacher	5	8.3
Watchman	20	33.3
Tailor	10	16.7
Farmer	10	16.7
Total	60	100.0

20. Results

Results	Cases	
	No.	**Percentage**
Good Improvement	50	83.3
Moderate Improvement	10	16.6
Mild Improvement	0	0.0
No Improvement	0	0.0

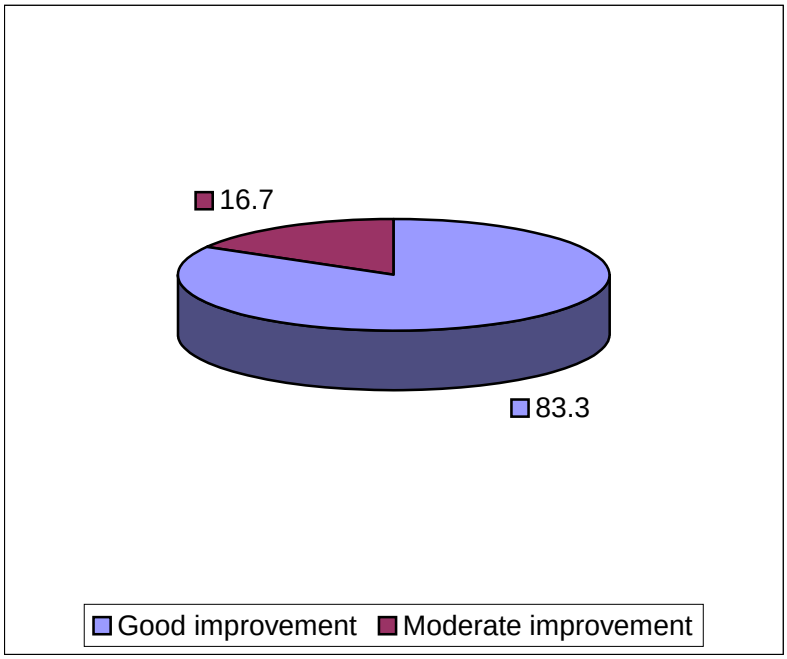


Table No. **Results of Statistical Analysis Objective parameters observed Before and After Treatment of 60(n) patients of Azhal keel vaayu**

National Institute of Siddha, Chennai – 600 047, During 2007-08

	Parameter	Mean			Paired t-test	Probability (P) Value	Statistical Significance of the Difference
		Before R_x	After R_x	Difference			
1a.	Joint circumberernce (cm)						
	Right knee joint(cm) N=58	44.2	43.3	0.9	t = 23.238	P< 0.05	Significant
1b	Joint circumberernce (cm)						
	Left knee joint(cm) N=52	45.6	44.6	1.0	t = 33.669	P< 0.05	Significant
2.	Total RBC's Million cells/cumm	3.96	4.05	0.09	t = 2.827	P< 0.05	Significant

DISCUSSION

Azhal keel vaayu is one among the ten types keel vaayu as mentioned in siddha maruthuvam text the symptoms of azhal keel vaayu more or less correlates with osteoarthirtis in modern medicine.

For this dissertation study 60 patients were selected and 20 patients were admitted in National Institute of Siddha , Sirappumaruthuvam in-patient ward and 40 patients were treated in out patient department with the trial drug.

These drugs which possess anti-Vaatha property as mentioned in siddha literature were selected and the trial drug was prepared as per the text.

The biochemical, pharmacological and toxicological study of the trial drug were tested in the laboratories of the results were documented.

Based on various criterias, the datas were colleted and tabulated the criterias were the gender predominance, incidence of the disease with respect to the age, kaalam (life span), seasonal variation, clinical manifestation, relation to menstrual cycle, diet and the assessment of the improvement in the prognosis of the disease with the trial drug.

The incidence of the disease was found to be more predominant in females (53.3%) and majority of the cases were reported in the age group above 40 years.

Post menopause is one of the criteria which increases the incidence of the disease (50%) in females

As mentioned in siddha literature the diseases was common in pithakaalam (between 34-66 years.

The changes were also noted in udal Thathukkal, Envagai Thervugal, Kanmeanthirium, Udal Vanmai, Mukkuttrams. This also aids in the diagnosis of the deranged Kuttrams.

The major clinical symptoms were reported to be pain, swelling in the affected joint, difficulty in movements of the knee jts.

Laboratory investigations of Blood, Urine, Stools were done for all 60 cases .

Out of 60 cases, 8 cases found to have diebeties mellitus. These patients confirmed their oral anti diabetic drugs which they were taking previously along with the trial drug these patients were given anti-diabetic drug along with the trial drug. The blood sugar levels were monitored and kept control during the treatment.

There was much remarkable change in the Total Count, ESR, Total Red Blood Cells, Haemoglobin. ESR has been decreased, whereas Total Count, Total Red Blood Cells, Haemoglobin increased.

Urea, Serum Creatine levels not much remarkable changes.

The radiographic studies of the cases showed narrowed joint space, presence of osteophytes, Soft tissue swelling. The trial drugs showed improvement in prognosis of the disease clinically rather in radiographic changes.

SUMMARY

The clinical study on Azhal Keel Vaayu with reference to its aetiology, pathogenesis, investigations, clinical features, diagnosis and treatment were conducted at the Sirappumaruthuvam Department, National Institute of Siddha, Chennai – 47

60 cases with the signs and symptoms of Azal Keel Vaayu were selected and a thorough observation was made.

The majority of patients were female.

The drugs administered in the clinical study were used only after careful purification process

During the study period, there were no drug reactions like tiredness, nausea, vomiting, abdominal pain, gastric discomfort, weakness reported

Among 60 the patients treated 90% showed good results. 10% showed moderate results.

CONCLUSION

Treatment was given for the Azhal Keel Vaayu on the basis of "Mukkutra Theory". The deranged Kuttrams were corrected by the medicine given.

Mirudharsingi chunnam and poochuennai as on internal & external respectively.

The above medicine were selected from the Siddha literatures korakkar santhraregai and Yugimunivaidhya kaaviyam respectively. Almost all the cases with above medicines were shown remarkable improvement.

Clinically, no adverse effects were reported during the course of treatment and the drug evaluation was done with modern parameters.

Reversible pharmacological effects found by modern parameters for this drug.

A length it is concluded that in the treatment of Azhal Keel Vaayu with Poochuennai were found to be very safe and also economical.

PROPERTIES OF TRIAL MEDICINES

மிருதார்சிங்கிச் சுண்ணம்

உண்டதொரு கற்பமிதை யுரைப்பே னிங்கு
உண்மையுடன் முதார்சிங்கோர் பலமே கொண்டு
வண்மையுறத் திருநீற்றுச் சாறு தன்னால்
வலுவாகத் திரிநாளும் ஆட்டிப் பின்னர்
பண்டுபோல் வட்டுச்செய்து ரவியு லர்த்திப்
பாங்காகக் குக்குடமாம் புடமும் ஐந்து
செண்டுபோல் இட்டெடுக்கச் சுண்ண மாகும்
சித்தர்களும் கண்டுவிட்டால் கொண்டே போவார்

கொண்டவர்கள் போகாமல் இருப்ப தற்கு
ஓம்-அம்-உம்-லம் மென செபிக்கக்
கண்டுஉனைச் சித்தர்களும் வரங்கள் ஈவார்
காசினியில் இம்மருந்தைக் காலை மாலை
உண்டிடுவாய் மண்டலமே ஆவின் நெய்யில்
உலையாது கற்றூண்போல் திரேகங் காந்தி
சண்டனில்லை வாதமெண் பதுவும் போகும்
சார்ந்திடவே புளிபோகம் அகற்றிக் காரே

கார்த்திடவே குண்டலிதான் வாசிதானும்
களங்கமற்று வலுவாகிச் சோதி தங்கும்
பூர்த்தியுற்றுப் பூரணமே லமுதம் பொங்கிப்
புகழ்பெரிய ஞானசித்தன் நீயே யாவாய்

கீர்த்தியுற்றுப் பதினெண்பேர் கொண்ட கற்பம்

கூறினேன் வாதிகளே விளம்பக் கேண்மின்

நேர்த்தியுடன் சுத்தித்த வெள்ளி செம்பில்

ஈந்திடவே சிங்கிச் சுண்ணம் மாற்றெட் டாமே

மிருதார் சிங்கி -1 பலம்

திருநீற்றுப் பச்சிலை சாறு - தேவையான அளவு

மிருதா சிங்கியை திருநீற்றுப் பச்சிலை சாறு விட்டு 3 நாட்கள் அரைத்து பட்டுபோல் செய்து காய வைத்து சூரிய வெப்பத்தில் உலர்த்தி கோழிபுடம் 5 முறை போட சுண்ணமாகும்.

அளவு - அரிசியெடை (65மில்லி கிராம்)

அனுபானம் - பசுநெய் (காலை, மாலை இரண்டு வேளை)

மருந்துண்ணும் கால அளவு - 1 மண்டலம் (48 நாட்கள்)

தீரும்நோய் - வாதம் 80

பத்தியம் - புளி, போகம்

மிருதார்சிங்கி

Galena Sulphie of Lead, Lead ore

வேறுபெயர்கள் - சிங்கி, முதார்சிங்கி, சிங்கு

செய்கை - துவர்ப்பி

குளிர்ச்சியுண்டாக்கி

புழுக்கொல்லி

பொதுகுணம்

”மிருதார சிங்கெனவே மெல்லவுரைத் தாலு

முருவார் புடைகரப்பா னோடு - மொருவிதமோ

சாலச் சிரங்குகுண்ணுந் தப்பாம லாறிவிடும்

வேலொத்த கண்மயிலே விள்.”

பொருள்

மிருதாருசிங்கியினால் உடம்பெங்கும் பரவுகின்ற படை, கரப்பான், கிரந்திக் கூட்டம் மகாவிரணம் இவை நீங்கும்.

மிருதார்சிங்கிச்சுத்தி

செய்யுமதார் சிங்கிச்சுத்தி சொல்லக்கேளு

திறமாமு தாரசிங்கிக் கட்டிவாங்கி

ஐயமிலா வெள்ளாட்டுக் கோமயத்தில்

அன்புடனே தான்போட்டு வேகவைத்துப்

பையவே ஆறவிட்டு அதையெடுத்துப்

பக்குவமாய்ச் சுண்ணச்செந் தூரஞ்செய்ய

மெய்யாக யாக்கோபு சொன்னேன்பாரு

மேதினியோர்க் கிதுநல்ல மார்க்கந்தானே

மிருதார் சிங்கியை வாங்கி ஒரு சாட்டியில் வெள்ளாட்டு கோமேயம் பிடித்து அதில் மிருதார் சிங்கியைப் போட்டுச் சட்டியை அடுப்பேற்றி ஒரு நாழிகைவரை கொதிக்க வைத்ததெடுத்துக் காயவைக்கச் சுத்தியாகும்.

பசுவின் நெய்

Cow's Ghee

தாக முழலைசுட்கஞ் சர்த்திபித்தம் வாயுபிர

மேகம் வயிற்றெரிவு விக்கலழல் - மாகாசங்

குன்மம் வறட்சி குடற்புரட்ட லஸ்திசுட்கஞ்

சொன்மூலம் போக்குநிரைத் துப்பு

பசுவினது நெய்யானது தாகம், உழலைப் பிணி, அதிசுட்கரோகம் , வாந்தி, பித்தாதிக்கம் , வாதவிஷமம் , விரணப்பிரமேகம் , வயிற்றிலெரிவு, பித்தவிக்கல், இருமல், வயிற்றுவலி, சினைப்பு, குடல் நெளிதல் , எலும்புருக்கி பல மூலரோகம் ஆகிய இவைகளை நீக்கும்.

திருநீற்றுப்பச்சை

Ocimum basilicum,. Linn

Family : Lamiaceae

English Name : Sweet Basil

Part Used : Whole Plant

சுவை : கார்ப்பு (விறுவிறுப்பு), தன்மை : வெப்பம், பிரிவு : இனிப்பு

செய்கை

வேர்

வியர்வையுண்டாக்கி - Diaphoretic

அகட்டுவாய்வகற்றி - Carminative

வெப்பமுண்டாக்கி - Stimulant

விதை

வழுவழுப்பு - Mucilaginous

உள்ளழலாற்றி - Damulcent

சிறுநீர்ப்பெருக்கி - Diuretic

சாறு

புழுக்கொல்லி - Anthelmintic

பொதுகுணம்

திருநீற்றுப்பச்சை சிலேஷ்மசர்த்தி தன்னை

விரிநீற்றைப் போலாக்கு மெய்யே - பெரிய

சுரத்திரத்த வாந்தி சுரமருசி நில்லா

வுரத்திரச்ச டைக்கே யுரை

- குணபாடம் மூலிகை வகுப்பு

பொருள்:

இதனால் ஐயம், வாந்தி முதலியவற்றையும் சுரத்தால் பிறக்கின்ற குருதி, வாந்தி முதலியவற்றையும் போக்கும்.

- ❖ சமூலம் வாதத்தை நீக்ககூடியது
- ❖ இதனால் வயிற்றைச் சேர்ந்த நோய்கள் தீரும்

Juvocimene I an juvocimene II isolated from oil and their structures determined and confirmed by synthesis (J.Chem. Ecol. 1984, 10, 1453: Chem. Abstr. 1985, 102, 75696 a): leaves afforded thymol, xanthomicrol and butyl caffeate 9planta med 1988, 54, 190): methyleugenl 933.95) and eugenol (23.1%) determined as major components in supercritical carbon dioxide.

New sesquiterpene hyderocarbon – 1 – epibicyclosesquiphellandrene – isolated from oil (phytochemistry 1974, 13, 1183); methl chavicol (90%) and linalool present in essential oil obtained from green leaves (Tap. Chi Hoa Hoc 1977, 15, 29; Chem. Abstr. 1978, 88, 158268 v).

பூச்சுயெண்ணெய்

கண்டீரின்னமுடக்கொத்தான் கரிபான்சாரணைகுப்பைமேனி
கொண்டேவேலிப்பருத்திதுராய் கூட்டிக்காடியொருநாழி
அன்றே சாறுநானாழி யாமணத்தெண்ணெய்நானாழி
யொன்றாய்க்கூட்கொய்ச்சிவடித் துடனேதடவவுடல் மீதே
உடலமதனிற்றாண்டவ யொடுங்குதிருகுவாதமது
கடல்போல்திரையுங்கழல்வாதம் கமழுமொழியும் வாதமது
அடலாம்கண்டவாதமுட னங்கண்முழந்தாள்பிடிப்புகளும்
திடமாய்ப்போகுமெனமுனிவர் திறந்தார்யூகிபெருநூலே

முடக்கத்தான்,
கரிசாலை,
குப்பைமேனி,
வேலிப்பருத்தி,
சாரணை,
துரா

} ஆகியவற்றின் சாறு பிழிந்து நான்கு நாழி (5.2 லி)

காடி - ஒரு நாழி (1.2 லி)

ஆமணக்கெண்ணய் - நான்குநாழி (5.2 லி)

சேர்த்து கலந்து ஒன்றாகக் காய்ச்சி வடித்து உடலில் தடவி வர முழந்தாள் பிடிப்பு ஆகியவை தீரும்.

குப்பை மேனி

(Acalypha indica)

Family - Euphorbiaceae

சுவை - கைப்பு, கார்ப்பு தன்மை - வெப்பம், பிரிவு - கார்ப்பு

செய்கை:

துயரடக்கி	- Anodyne
புழுக்கொல்லி	- Anthelmintic
பெருமலம்போக்கி	- Cathartic
சிறுநீர்ப்பெருக்கி	- Diuretic
வாந்தியுண்டாக்கி	- Emetic
கோழையகற்றி	- Expectrant
சூதகமுண்டாக்கி	- Emmenagogue

பொதுகுணம்

தந்தமூ லப்பிணிதீத் தந்திடுபுண் சர்வவிடம்
உந்துகுன்மம் வாதம் உதிரமூ - லந்தினவு
சூலஞ்சு வாசம் தொடர்பீ சங்கபம்போம்
ஞாலங்கொள் மேனியத னால்

இதன் இலையால் வளிநோய், குத்தல, பல்லடி நோய், தீச்சுட்டப்புண், பயிர் வகையின் நஞ்சு, வயிற்று வலி, மூலம், நமைச்சல், இரைப்பு மூக்குநீர் பாய்தல், கோழை ஆகியவை நீங்கும்

CONSTITUENTS:

- A cycanogenetic glucoside, Acalyphine,
- Two alkaloids, viz, avalyphine and triacetonamine
- An essential oil n – octacosanol, kaempferot, uebrachitol, b-shitosterol acetate and tannin (whoe plant); stigmasterol (root)
- Acalyphamide (as acetae),
- Aurantia – mide and its acetae,
- Succinimide calypho lacetate
- 2 – Methyl anthraquinone,
- Tri –O-methylellagic acid.
- B- sitosterol and its b –D- glucoside (leaves)

முடக்கற்றான்

Cardiospermum halicacabum. Linn

Family - Sapindaceae

செய்கை - வாதமடக்கி - Antivaada

பொதுகுணம்

சூலைப் பிடிப்பு சொறி சிரங்கு வன்கரப்பான்

காலைத் தொடுவாய்வுங் கன்மலமும் - சாலக்

கடக்கத்தா னோடிவிடுங் காசினியை விட்டு

முடக்கற்றான் றன்னை மொழி

இதனால் கீல், சினைப்பு, கிரந்தி, கரப்பான் , கால்வடியைப் பற்றிய வளி ஆகியவை போகும்.

கரிசலாங்கண்ணி

Eclipta Prostrata. Linn

பயன்படும் உறுப்பு - பூண்டு

சுவை - கைப்பு, தன்மை - வெப்பம், பிரிவு - கார்ப்பு

செய்கை:

பித்தநீர்ப்பெருக்கி - Chlagogue

உரமாக்கி - Tonic

உடற்றேற்றி - Alterative

வாந்தியுண்டாக்கி - Emet

நீர்மலம்போக்கி - Purgative

வீக்கமுருக்கி - Deobstruent

ஈரல்தேற்றி - Hepeto tonic

பொதுகுணம்:

"குரற்கம்மற் காமாலை குட்டமொடு சோபை

யுறற்பாண்டு பன்னோ யொழிய - நிரற்சொன்ன

மெய்யாந் தகரையொத்த மீளி ண்ணு நற்புலத்துக்

கையாந் தகரையொத்தக் கால்

இதனால் குரலுறுப்பு நோய், காமாலை, குட்டம், வீக்கம், பாண்டு, பல்நோய் ஆகியவை போம். ஊடலிற் சொற்சாயலும் ஆளிக்குள்ள பலமும் உண்டாகும்.

தரா

Fumaria Parviflora. Linn

Family - Fumariacea

பயன்படும் உறுப்பு - இலை

சுவை - கைப்பு, தன்மை - வெப்பம், பிரிவு - கார்ப்பு

செய்கை:

வியர்வைப்பெருக்கி - Diaphoretic

சிறுநீர்ப்பெருக்கி - Diuretic

புழக்கொல்லி - Anthelmintic

மலமிளக்கி - Aperient

செய்குணம்

புண்கிரந்தி கட்டி பொருசன்னி கீடமும்போம்

கண்புகைச்சல் காசங்கதிக்கு மென்பர் - பெண்களுக்குப்

பாலும் பெருகுமுள்ளே பற்றுதிரச் சிக்கல்விடும்

எலுந் தராவி னிலைக்கு

இது புண், கழலை, முப்பிணி நோய்கள், கண்புகைச்சல், கண்காசம், சூதகக்கட்டு ஆகிய இவைகளைப் போக்கும். பெண்களுக்கு முலைப்பாலைப் பெருக்கும்.

வேலிப்பருத்தி

Pergularia extensa

Family - Asclepiadace

சுவை - கைப்பு தன்மை - வெப்பம் பிரிவு - கார்ப்பு

செய்குணம்:

ஆலித் தெழுந்தநோய் அத்தனை யுந்தீருஆட

வேலிப் பருத்தியதின் மெல் இலையால் - வேலொத்துக்

கண்டிக்கும் வாதங் கடுஞ்சன்னி தோடமும்போம்

உண்டிக்கும் வாசனையாம் ஓது.

உத்தா மணியிலையால் உள்வயிற்றுக் குன்மமொடு

குத்தாம் வலியுங் குளிரும்போம் பற்றி

இசிக்கும் வலியிரைப்பும் எத்தடிப்பும் ஏரும்

பசிக்குமதி மாந்தமும்போம் பார்

உத்தாமணி வேர், கொடி, இலை, பால் இவைகளினால் செய்த குடிநீரை ஒரு மண்டலம் உபயோகித்தால் சலதோஷத்தினால் உண்டாகும் வாதபித்த சன்னிகளின் பேதங்களான தோஷவிடங்கள் யாவும் நீங்கும்.

மூக்கரைச்சானை

BOERHAAVIA REPENS

Family - Nyctagineae

சுவை - கைப்பு

துன்மை - வெப்பம்

பிரிவு - கார்ப்பு

சேய்கை

கோழையகற்றி கபஹரகாரி Expectorant

சிறுநீர்ப்பெருக்கி Diuretic

மலமிளக்கி Laxative

குறிர்ச்சியுண்டாக்கி Refrigerant

புழுக்கொல்லி Anthelminitic

பொதுகுணம்

சீத மகற்றுந் தினவடக்குங் காந்திதரும்

வுாத வினையை மடிக்குங்காண்-பேதி

கோடுக்குமதை உண்டாக்காற் கோமளமே பித்தம்

ஆடுக்குமே மூக்குரட்டை யாய்

வலிபிணி, நமைச்சல், ஐயம், நீக்கும்

ஆமணக்கு நெய்

(Castor Oil)

ஆமணக்கு நெய்யா லனைவர்க்கு முண்டுகலம்

பூமணக்கு மேனி புரிகுழலே வாய்மணக்க

கொள்ளில் வயிறுவிடுங் கோரமுள்ள வாயுவறு

முன்னில்வரு குண்மம்போ மோர்

செய்கை: மலகாரி, சமனகாரி

காடிநீர

Vinegar of Oryza Satira

செய்கை: சீதளகாரி, சமனகாரி

பித்த மயக்கமறும் பேரவுஷ தம்முறியும்

உற்றபிணி யிற்சிலவை மோடுங்காண் சற்றும்

வழங்கா வசீரணமும் வன்பேதியும் போம்

பழங்காடிக் குள்ள பயன்

பழைமையாயை காடி சலத்தினால் பித்தமயக்கம், சோபரோகம் முதலியவைகள் அசீரணம், வாதாதிசாரம் போகும்.

PRECLINICAL STUDY OF THE DRUG

QUALITATIVE ANALYSIS OF ACIDIC/BASIC RADICALS AND PHYTOCHEMICALCONSTITUENTS IN TEST DRUGS

Procedure	Observation	inference
Test for Calcium: 2 ml of extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxide solution.	White precipitate is formed	Presence of calcium
Test for Sulphate : 2 ml of the extract is added to 5 % barium chloride solution.	White Precipitate is formed	Presence of Sulphate
Test for Chloride : The extract is treated with Silver nitrate solution	White precipitate is not formed	Absence of Chloride
Test for carbonate : The substance is treated with Conc. HCl.	Effervescence is formed	Presence of carbonate
Test for Starch : The extract is added with weak iodine solution	Blue colour is not formed	Absence of starch
Test for Iron (Ferric) : The extract is treated with glacial acetic acid and potassium ferrocyanide	Blue colour is not formed	Absence of Ferric iron
Test for Iron (Ferrous) : The extract is treated with Conc. HNO_3 and ammonium thiocynate	Blood red colour is formed	Presence of Ferrous iron
Test for phosphate : The extract is treated with ammonium molybdate and conc. HNO_3	Yellow precipitate is not formed	Abesence of phosphate

Test for Tannic acid : The extract is treated with Ferric chloride	Blue black precipitate is not formed	Abesence of Tannic acid
Test for Unsaturation : 1 ml of Potassium permanganate solution is added to the extract.	Does not get decolourised	Absence of unsaturated compound
Test for saponins: Dilute extract+ 1ml of distilled water shake well.	No Froth formation	Abesence of saponins
Test for sugars : **Benedict method** ; 5ml of Benedict solution heated gently then add 8 drops of diluted extract then heated in a boiling water bath.	colour change	Indicates the Presnce of sugar
Test for steroids : Liberman Burchard test ; Dilute extract +2 ml acetic anhydride+conc.H_2SO_4 .	Red colour is not formed	Absence of steroids
Test for amino acids: Dilute extract +2ml of Ninhydrin's soln .	Violet colour is not formed	Absence of amino acids
Test for proteins: Biuret method ; 1ml of dilute extract+1mlof5%$CuSO_4$+ 1%NaOH.	Violet colour is not formed	Absence of Proteins

Test for Flavanoids : Dilute extract+ mg bits+2drops of conc.HCl and gently heated.	No formation of pink colour	Absence of Flavanoids
Test for phenol; Dilute extract+2drops of $FeCl_3$ soln.	Deep green colour is not formed	Absence of phenols
Test for Tannins; dilute extract +2ml of 10%lead acetate add.	White precipitate formed	Presence of tannins
Test for alkaloids; Mayer's method; 1ml of dilute extract + 1ml reagent.	Cream colour precipitate is formed	Presence of alkaloids

PHARMOCOLOGICAL STUDY

MATERIALS AND METHODS

Test Drug

The following drug was used in the study collected and processed by the methods prescribed in standard textbooks of siddha medicines.

Mirudharsingi Chunnam (MC)

Mirudharsingi Chunnam was prepared by the method described in (Korakkar Santhraregai)

Preparation of drug for dosing

All drugs used for the study was suspended each time with 1% (w/v) solution of sodium carboxy methyl cellulose before administration.

Drugs and chemicals

Alloxan monohydrate and fine chemicals used in these experiments were obtained from Sigma Chemicals company, U.S.A. Other analytical grade chemicals were obtained from S.d. Fine Chemicals Ltd., Mumbai.

Experimental animals

Colony inbred animals strains of wistar rats of either sex weighing 200 - 250 g were used for the pharmacological and toxicological studies. The animals were kept under standard conditions 12:12 (day/night cycles) at 22^0C room temperature, in polypropylene cages. The animals were fed on standard pelleted diet (Hindustan Lever Pvt Ltd., Bangalore) and tap water *ad libitum*. The animals were housed for one week in polypropylene cages prior to the experiments to acclimatize to laboratory conditions. The experimental protocol was approved by the Institutional Animal Ethical Committee (IAEC).

ANTI INFLAMMATORY STUDY

Anti inflammatory activity

Anti inflammatory activity of MC was evaluated in both acute and chronic models of inflammation.

Acute model

a. Carrageenan induced hind paw edema

The carrageenan assay procedure was carried out according to the method of Wintar *et al.* (1962). Edema was induced by injecting 0.1 ml of a 1% solution of carrageenan in saline into the plantar aponeurosis of the left hind paw of the rats. The extracts, reference drug and the control vehicle (distilled water) were administered 60 min prior to the injection of the carrageenan. The volumes of edema of the injected and contra lateral paws were measured at +1, 3 and 5 hrs after induction of inflammation using a plethysmometer (Bhatt *et al*., 1977) and percentage of anti-inflammatory activity was calculated.

Chronic model

b. Cotton pellet granuloma

Sterile cotton pellets (weighing 10 ± 2 mg) were implanted subcutaneously along the flanks of axillae and groins of wistar albino rats (Swingle and Shideman *et al*., 1972). The extracts, reference drug and the control vehicle (distilled water) were administered as per protocol to rats everyday for a period of 7 days. On day + 8 the rats were sacrificed by cervical decapitation and cotton pellets were removed surgically, freed

from extraneous tissue and weighed immediately for wet weight. One half of the pellets were dried in an incubator at 60ºC until a constant weight was obtained.

Groups	**Paw volume (ml) by Mercury Displacement at Regular interval of Time**				
	0min	**30min**	**60min**	**120min**	**240min**
Test	0.901±0.034	1.096±0.077	0.978±0.044	1.38±0.12**	1.22±0.017**
Standard (Dic.Sodium 5 mg/kg/po)	0.883±0.063ns	0.996±0.067**	1.02±0.064**	0.926±0.041**	0.896±0.026**

Anti inflammatory activity of (MC) in Cotton Pellet Granuloma

Groups	**Cotton pellet Granuloma method**
	Dry Weight (mg)
Control	115.87 ± 15.42
Test	76.00 ± 10.32**
Standard (Dic.Sodium 5 mg/kg/po)	70.00 ± 7.42**

n=6; Values are expressed as mean ± S.D followed by One Way Anova using Dunnett's Test

**P<0.01 as compared with that of control.

ns – non significant when compared to control groups

ANALGESIC ACTIVITY OF (MC) USING EDDY'S HOT PLATE METHOD

Analgesic activity

Hot plate test

The test was performed using Eddy's hot plate maintained at a temperature of 55 ± 1°C. The basal reaction time of all animals was recorded. The animals which showed fore paw licking or jumping response within 6-8 secs were selected for the study. 60 min after the administration of test and reference compounds, the animals in all the six groups were individually exposed to the hot plate maintained at 55°C. The time taken in secs for fore paw licking or jumping was taken as reaction time. A cut off period of 15 secs is observed to avoid damage to the paws. Analgesic activity was recorded at hourly intervals of 2 hours after drug administration

Groups	**Paw licking response (Sec)**			
	0 min	30 min	60 min	120 min
Control	7.76±0.96	7.93±0.96	7.86±0.67	8.26±0.53
Test	7.76±0.98	8.80±0.76	9.80 ± 1.50^{ns}	$10.50\pm1.37^{*}$
Standard (Dic.Sodium 5 mg/kg/po)	8.43±0.89	8.83±1.16	$12.20\pm1.71^{**}$	$14.18\pm1.13^{**}$

n=6, Values are expressed as mean ± S.D using one way ANOVA followed by Dunnet's method.

$P<0.05$ as compared with that of control.

ANTI - PYRETIC ACTIVITY

Rats selected for the study were fasted overnight allowing water *ad libitum*. Initial rectal temperature was recorded using Hick's clinical thermometer. Pyrexia was induced by subcutaneous injection of TAB vaccine 1 ml/kg body weight. Six hrs later pyrexia was assessed and those animals that did not show a minimum rise of 1.5^{o}C were rejected. The animals thus found fit for the study were divided into 6 groups as described above and drugs were administered. Pyrexia was recorded at hourly intervals for 3 hrs after drug administration.

Antipyretic activity of (MC) using Digital Rectal Thermometer

Groups	**Rectal temperature (^{0}C)**				
	0 min	30 min	60 min	120 min	240 min
Control	35.90±1.18	37.23±1.24	38.27±0.34	37.20±1.08	36.46±0.88
Test	35.93±0.20	37.10±0.30	36.33±0.41***	35.58±0.50*	35.01±0.39*
Standard (Dic.Sodium 5 mg/kg/po)	35.80±0.97	36.96±0.95	35.87±0.65***	35.65±0.60*	35.42±0.52*

n=6, Values are expressed as mean ± S.D using Student's paired 't' test.

P<0.05 as compared with that of control.

IN VIVO ANTIOXIDANT STUDY

Samples of serum collected from rats treated with test drugs were assayed for GSH (Moron *et al* , 1979) and LPO (Yagi, 1976) and the results were compared with control group.

Anti oxidant activity of MC after 21 days repeated oral dosing (500 mg/kg)

Groups	LPO	GSH
Control	0.95 ± 1.37	25.760 ± 0.632
MC	0.02152±3.90***	47.721 ± 1.2062***

N=6; Values are expressed as mean ± S.D followed by Student T- Test.

***P<0.001 as compared with control.

ns – non significant when compared to control groups

ACUTE ORAL TOXICITY STUDY

Acute oral toxicity was conducted as per the OECD guidelines (Organization of Economic Cooperation and Development) 423 (Acute Toxic Class Method). The acute toxic class method is a stepwise procedure with 3 animals of a single sex per step. Depending on the mortality and /or moribund status of the animals, on the average 2-4 steps may be necessary to allow judgment on the acute toxicity of the test substance. This procedure results in the use of a minimal number of animals while allowing for acceptable data based scientific conclusion.

The method uses defined doses (5, 50, 300, 2000 mg/kg body weight) and the results allow a substance to be ranked and classified according to the Globally Harmonized System (GHS) for the classification of chemicals which cause acute toxicity

Wistar albino rats of either sex weighing 200-250 g were fasted overnight, but allowed water *ad libitum*. Since the formulation is relatively non toxic in clinical practice the highest dose of 2000 mg/kg/p.o (as per OECD guidelines "Unclassified") was used in the acute toxicity study.

The animals were observed closely for behavioural toxicity, if any by using FOB (Functional observation battery).

REPEATED ORAL TOXICITY STUDY

Repeated oral toxicity studies can be used to get additional information regarding the toxicity profile of a chemical. Repeated oral toxicity studies are defined as those studies where the chemical is administered to the animal for a period covering approximately 10% of the expected life of the animal. Usually, the dose levels are lower than for acute studies and allow chemicals to accumulate in the body before lethality occurs, if the chemical possess this ability.

Experimental procedure

The following experimental procedure was followed to evaluate the repeated oral toxicity study of

1. Mirudharsingi Chunnam (MC)

Group I : Control animals received 1% tween 20, 2 ml/kg/p.o. for 21 days

Group II : Mirudharsingi Chunnam (MC) with ghee at the dose Level of 500 mg/kg/p.o. for 21 days

Body weight, food intake and water intake was recorded at two intervals with simultaneous observation for toxic manifestation and mortality, if any. At the end of 21 days treatment all the animals were sacrificed by over dosage of ether anaesthesia. Blood was collected and used for haematological studies. Section of liver, kidney, and heart were dissected out and kept in 10% formalin for histopathological studies

Effect of Siddha Formulations (MC) on Haematological parameters after 21 days repeated oral dosing (500 mg/kg)

Groups	Hb (gm/100ml)	RBC (millions/cu.mm)
Control	14.45±0.4113	5.20±0.047
Test	13.92±2.22^{ns}	4.183±0.4262**

N=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test

***P<0.001 as compared with that of control.

ns – non significant when compared to control groups

Effect of Siddha formulation (MC) on Biochemical markers of liver and kidney after 21 days repeated oral dosing (500 mg/kg/po) in rats

Groups	**ALP (K.A.Units)**	**AST (IU/L)**	**ALT (IU/L)**	**Urea (mg/100ml)**	**BUN (mg/ 100ml)**	**Glucose mg/dl**	**Cholesterol mg/dl**
Control	2.973±0.3929	79.89±1.906	25.48±2.93	16.38±2.12	7.52±0.84	83.57±6.97	53.75±6.90
Test	3.667±0.4719 *	157.2±3.920 ***	17.08±0.80 ***	17.03±0.187 ns	7.90±0.11 ns	86.27±11.47 ns	59.78±3.20 ns

N=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test

***P<0.001 as compared with that of control.

ns – non significant when compared to control

Results

Preliminary basic, acidic radicals and phytochemical studies

The qualitative chemical analysis and acidic, basic radicals assay of the drugs showed the presence of phytoconstituents and minerals as depicted in (Table 1).

Acute oral toxicity study

MC at the dose of 2000mg/kg/po did not exhibit any mortality in rats. As per OECD 423 guidelines the dose is said to be "Unclassified" under the toxicity scale. Hence further study with higher doses was not executed.

Repeated oral toxicity for 21 days

Test drug MC at the dose of 500 mg/kg/po when administered orally for 21 days in rats did not show toxicity in renal functions. However the drug exhibited significant reduction in RBC count and elevation of marker enzyme levels of liver (Table 2 and 3). 21 days repeated dosing of the drug did not exhibit change in the serum glucose and cholesterol levels (Table 3).

Histopathological study

MC at the dose of 500 mg/kg/po daily administered for 21 days did not show evidence of pathological lesions in the tissues tested (Plate 1).

Analgesic, Antiinflammatory and Antipyretic studies

MC at the dose of 500 mg/kg/p.o showed significant analgesic, antipyretic activity in rats(Table 7,8). MC also exhibited significant anti-inflammatory activity in both carrageenan induced hind paw (acute inflammation model) and cotton pellet

granuloma (chronic inflammation model) models of inflammation in rats. The results of present study was comparable to that of the standard NSAID Diclofenac sodium (5 mg/kg/p.o) (Table 4,5).

Antioxidant activity

At the end of 21 days repeated oral toxicity study when the plasma of drug treated animals was examined for GSH activity, the level of GSH activity was increased significantly ($p>0.001$) in test groups. On the other hand the LPO activity was considerably reduced in drug treated group when compared to control (Table 6).

Discussion

The siddha formulation MC was tested for its reverse pharmacological and toxicological profiles in the experimental rats. The drug did not exhibit mortality at the dose of 2000 mg/kg/p.o, hence further test was not conducted with higher doses. According to OECD 423 guidelines, the substances did not exhibit mortality at the dose of 2000 mg/kg/p.o and above are "Unclassified" in the toxicity scale.

The preliminary phytochemical study revealed the presence of alkaloids and tannins in the test drug. The test drug also answered for the presence of Ca^{++}, Fe^{++}, sulphate and carbonate.

The repeated oral toxicity study conducted for 21 days with the drug did exhibit significant reduction ($P<0.01$) in RBC count without significant change in Hb%, similarly the test drug exhibited significant ($P<0.001$) alteration in liver marker enzymes levels (AST and ALT) with lesser significant ($P<0.05$) effect on ALT. However, these alterations did not reflect on the histopathological study of liver tissue

after 21 days repeated dosing. There was no significant changes in Haematological parameters like blood sugar, Cholesterol, body weight, food, water intake and behavioural parameters. However the drug did not exhibit any alteration in the function of kidney after repeated oral dosing for 21 days.

The test drug exhibited significant analgesic, antipyretic and anti-inflammatory activity in both acute and chronic experimental inflammatory conditions in rats. In cotton pellet granuloma the test drug (500 mg/kg/p.o) exhibited significant ($P<0.01$) anti-inflammatory activity which was comparable to that of Diclofenac Sodium (5 mg/kg/p.o). A similar result was also obtained with the test drug in carrageenan induced hind paw edema model. The test drug showed maximum anti-inflammatory activity at the end of 4^{th} hour after carrageenan challenge. The result of test drug (500 mg/kg/p.o) was comparable to that of Diclofenac Sodium (5 mg/kg/p.o). Since the maximum anti-inflammatory activity (reduction in the paw edema volume) was observed at the end of 4^{th} hour, the mechanism of anti-inflammatory activity of test drug may be attributed for its inhibitory activity on cyclooxygenase (COX) enzymes.

The present study on the reverse pharmacological and toxicological profiles of the drug may be summarized as follows :

1. The drug is relatively safe since it exhibited no mortality even at the dose of 2000mg/kg/p.o
2. Though the repeated drug treatment for 21 days exhibited alteration in the liver function tests, the test drug did not exhibit any alterations in the normal architecture of the liver at the end of 21 days. Since there is no report on the LFT done in clinical study, it can be reasonably

assumed that the drug is safe for humans unless and otherwise proved with clinical data generated on LFT.

3. The reduction in RBC count on repeated administration for 21 days may be accounted for high level of lead (Pb) in the preparation (not reported).
4. The present experimental study exhibits a good correlation between clinical efficacy of drug vis-a-vis reverse pharmacological test results.
5. Further, on the evidence of reverse pharmacological studies Liver function tests (LFT) should be made mandatory in patients receiving the drug for a longer duration with titration of doses to get maximum clinical efficacy.
6. The formulation exhibited significant antioxidant and inhibition of LPO in rats treated for 21 days

CONSENT FORM

Certificate by Investigator

I certify that I have disclosed all details about the study in the terms readily understood by the Patient.

Date :_____ Signature _____

Name _____

Consent by Patient

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow – up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of **"Mirutharsingi Chunnam** and **Poochu Ennai"** for the management ***Azhal Keel Vaayu*** **(OsteoArthritis)**

Date: Signature

Name:

HAEMATOLOGICAL REPORT FOR 60 PATIENTS

S.NO	IP NO	NAME	AGE	SEX	1ST DAY						24TH DAY						48TH DAY					
					TC CELLS/CUMM	DC%			ESR		TC/ CELLS/ CUMM	DC%			ESR		TC CELLS/CUMM	DC%			ESR	
						P%	L%	E%	½ HR	1 HR		P%	L%	E%	½ HR	1 HR		P%	L%	E%	½ HR	1 HR
1	454	SENTHAMARAI	67	M	7800	58	40	2	17	36	7800	56	40	2	12	24	7900	56	40	2	6	12
2	186	JOTHI	49	F	7800	50	48	2	24	38	7900	54	42	2	14	34	7800	50	49	2	14	20
3	455	NARAYANAN	70	M	7600	50	46	4	35	72	7800	59	40	4	26	52	7900	60	58	2	8	16
4	194	JAYALAKSHMI	50	F	9000	54	40	6	12	26	8800	54	40	2	10	22	8900	56	42	2	8	16
5	198	NAGAMAL	58	F	8100	50	40	6	12	26	9000	50	40	4	8	16	9200	50	40	4	6	12
6	475	BOOPTHAY	60	M	8100	50	40	6	12	26	9000	50	40	4	8	16	9200	50	40	4	6	12
7	482	ABDUL JHADER	52	M	7600	54	42	4	14	28	9600	52	40	2	6	12	7800	54	40	2	6	12
8	207	SAGUNTHALA	46	F	7900	54	44	4	18	26	8800	52	44	4	12	24	8800	56	40	4	10	20
9	481	CHINNAKANNU	51	M	7800	56	40	4	8	10	8200	54	42	2	6	12	8500	56	46	2	4	8
10	223	PADMAVATHI	65	F	8000	60	40	2	18	38	8100	58	46	2	16	32	8200	60	48	2	8	16
11	498	GANESAN	56	M	8800	58	48	4	9	18	8800	58	40	2	4	10	8900	56	46	2	4	8
12	507	SELVAM	40	M	7200	54	42	4	10	20	8000	54	42	2	6	12	8300	50	42	2	4	10
13	509	BALU	51	M	7500	54	42	2	6	12	7800	50	42	4	4	8	7800	58	48	2	2	4
14	510	KARUPPAN	55	M	7800	58	40	2	10	20	8000	56	46	2	8	16	8600	58	44	2	8	16
15	515	PERUMAL	50	M	7300	56	40	4	6	12	8000	55	40	2	3	6	8200	54	40	2	2	4
16	241	CHANDARA	55	F	7800	60	46	4	12	26	7900	56	40	4	10	22	7900	58	44	2	8	16
17	246	LALITHA BAI	65	F	7000	56	38	6	12	24	7800	56	40	4	8	16	7800	58	40	4	4	10
18	530	BASAVARAJAN	70	M	6800	56	40	2	8	16	6900	56	44	2	8	16	6800	54	44	2	6	12
19	251	MAYAVADHI	50	F	7300	56	40	4	18	36	7400	56	40	2	12	24	7600	56	44	2	10	20
20	257	YAMUNA BAI	53	F	8100	59	39	2	14	28	8300	56	48	2	13	26	8700	54	40	2	10	20

S. NO	OPNO	NAME	AGE	SEX	1ST DAY						24TH DAY						48TH DAY					
					TC CELLS/CUMM	DC%			ESR		TC/ CELLS/ CUMM	DC%			ESR		TC CELLS/CUMM	DC%			ESR	
						P%	L%	E%	½ HR	1 HR		P%	L%	E%	½ HR	1 HR		P%	L%	E%	½ HR	1 HR
21	S510	K.SANTHANAM	63	M	6900	50	46	4	12	26	7300	48	45	4	6	14	7300	50	44	2	6	12
22	S1205	MUTHULAKSHMI	53	F	8000	54	44	2	8	16	8400	56	42	2	6	12	8400	52	44	2	5	10
23	S2585	LOGANATHAN	60	M	7800	58	36	6	4	8	7900	56	40	4	4	8	7900	48	42	2	4	8
24	S2861	RAJAKUMARI	43	F	8700	54	40	4	6	12	8800	50	42	4	5	10	8900	54	42	4	5	10
25	S2973	SAKUM\NTHALA	57	F	6000	54	40	6	8	14	6000	48	50	2	6	14	6200	50	48	2	6	12
26	M9760	SEENU	55	F	7700	52	46	8	5	10	7800	50	44	4	5	10	7800	52	44	2	4	18
27	S6119	SANTHYA	44	F	7400	50	44	6	8	16	7400	50	44	4	8	16	7200	50	46	2	5	10
28	S7163	RAMILA	42	F	9000	60	40	2	4	8	8900	58	44	2	4	8	8900	58	44	2	4	8
29	S9410	SANMUGAVALLI	58	F	8400	54	40	6	16	32	8400	56	42	6	12	24	8300	56	42	4	8	16
30	S9944	RAJU	65	M	7200	58	40	2	4	8	7200	58	40	2	4	8	7600	56	40	2	4	8
31	S9802s	UNAMALAI	47	F	7700	54	40	6	12	26	7800	54	44	6	10	20	7800	56	40	4	6	12
32	T270	DHAKSHANAMURTHY	61	M	8000	58	38	4	9	12	8100	60	40	2	6	12	8200	56	40	2	2	4
33	T1935	RAJENDERAN	52	M	8200	56	48	4	2	4	8600	54	46	2	2	4	8700	56	48	2	2	4
34	T2034	TULASI	65		8900	58	49	4	12	24	8800	56	48	2	10	20	8900	56	48	2	8	16
35	T2529	JANABAI	50	M	7800	56	40	4	8	22	7800	54	40	2	8	16	7800	54	40	2	8	16
36	T3015	PONNAMMAL	50	F	8400	48	40	2	5	10	8200	48	46	2	5	10	8700	48	40	2	5	10
37	T4330	VIJAYLAKSHMI	52	F	8100	60	40	2	4	10	8000	58	42	2	8	16	8100	56	42	2	8	16
38	T4521	KAUSHALYA	55	F	7200	56	40	4	12	25	7100	54	42	2	10	20	7200	50	40	2	8	16
39	T5524	RAJAMANI	59	F	8700	50	46	4	8	16	8900	56	46	4	8	16	8600	50	46	2	6	12
40	T5766	ARUMUGAM	46	M	8000	56	36	4	2	4	8000	56	36	4	2	4	8200	56	36	2	2	4

S. NO	OPNO	NAME	AGE	SEX	1ST DAY						24TH DAY						48TH DAY					
					TC CELLS/CUMM	DC%			ESR		TC/ CELLS/ CUMM	DC%			ESR		TC CELLS/CUMM	DC%			ESR	
						P%	L%	E%	½ HR	1 HR		P%	L%	E%	½ HR	1 HR		P%	L%	E%	½ HR	1 HR
41	T6419	RAJI	50	F	7800	58	42	4	10	22	7600	58	40	2	8	16	7600	58	40	2	8	16
42	T7414	MARIAMMAL	63	F	7300	52	46	4	10	22	7200	52	46	2	2	16	7400	50	46	2	8	16
43	T8561	RAJ KUMAR	48	F	8800	56	38	2	10	22	8700	54	38	4	8	16	8600	54	36	2	6	12
44	T8605	MOHANRAJ	59	M	8800	56	40	2	4	8	8900	56	40	2	8	8	8800	56	40	2	4	8
45	T8665	PUSHPA RANI	56	M	9200	52	40	6	10	22	8900	50	38	2	8	16	8900	50	40	2	8	16
46	T8904	YETHIRAJULU	78	F	9600	56	40	4	6	12	9500	54	40	2	4	12	9500	54	40	4	6	12
47	T9225	MANIKAM	65	M	8100	58	48	8	6	12	7900	49	44	4	8	12	7900	48	46	2	6	12
48	T9020	VALLI	47	F	7500	52	42	4	10	20	7600	43	42	6	6	12	7700	40	42	2	6	12
49	U1095	CHANDRAPILLAI	59	F	7100	54	40	4	25	54	7000	52	42	2	10	20	7000	54	44	2	8	16
50	U1136	KANNIA	50	F	8200	50	46	4	10	20	8100	50	46	2	8	16	8000	56	46	2	8	16
51	U1494	THIRUNAUKARASU	69	M	6800	56	40	6	8	16	6700	56	42	4	6	12	6900	56	40	2	6	12
52	S7163	KANNATAHL	55	F	8700	56	42	4	16	32	8600	52	42	2	12	24	8500	54	40	2	8	16
53	U6091	KANCHANA	52	F	8700	59	39	4	14	30	8600	58	38	2	8	16	8500	58	38	4	6	12
54	U6499	DAHANALAKSHMI	62	F	8800	56	40	4	14	20	8900	56	42	4	10	20	8900	50	40	2	6	12
55	U7214	DHARMARAJAN	62	M	8700	52	48	2	12	24	8600	54	48	4	10	20	8500	52	48	2	8	16
56	U7552	KASTURI	55	F	7800	58	36	4	18	38	7800	50	34	2	12	24	7900	56	34	2	10	20
57	U8708	ALAMELU	50	F	7800	50	44	4	10	22	7600	50	42	2	8	16	7600	48	40	4	6	12
58	U8566	ALLAPICHAI	60	M	7900	48	48	6	12	24	7800	48	46	2	8	16	7700	49	48	2	6	12
59	T7348	SARASWATHI	55	F	7000	58	40	6	13	26	7000	58	40	2	10	20	6900	56	40	2	8	16
60		FATHIMA	45	F	7000	50	42	2	10	20	7100	46	42	2	8	16	7000	40	42	2	6	12

					FIRST DAY								24TH DAY								49TH DAY							
SI NO	IP NO	NAME	AGE	SEX	BLOOD SUGAR								BLOOD SUGAR								BLOOD SUGAR							
					F	PP	R	Hb	TRBC	Urea	S. creatin	S. chol	F	PP	R	Hb	TRBC	Urea	S. creat	S chol	F	PP	R	Hb	TRBC	Urea	S. creat	S. chol
					Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%	Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%	Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%
1	454	SENTHAMARAI	67	M	126	215		13	4.5	42	0.8	167	110	170		14	4.5	39	0.8	160	114	200		15	4.8	40	0.8	170
2	186	JOTHI	49	F	74	126		11.6	3.8	30.2	1.2	156	81.4	141		11.6	3.8	31	0.8	178	80	120		11.6	4.0	27	0.8	160
3	455	NARAYANAN	70	M	90	141		12	4.5	40	1.1	172	84	110		12	4.8	35	0.8	180	90	121		13.4	5.2	31	0.8	164
4	194	JAYALAKSHMI	50	F	96.2	126		12.2	4.3	35	1.2	174	74	79		12.6	4.4	32	1.2	180	74	120		12.8	4.8	32	0.8	178
5	198	NAGAMAL	58	F	181.4	244		12.8	3.5	29	1.1	181	130	160		13.2	3.9	22	0.8	183	120	160		13.2	4.2	22	0.8	161
6	475	BOOPTHAY	60	M	107	156		12	5.2	39	0.9	200	71	114		12.8	5.2	30	0.8	208	92	120		13	5.4	30	0.8	172
7	482	ABDUL JHADER	52	M	78	96		12.2	4.8	41.4	0.8	150	84	112		11.8	5.2	40	0.8	165	90	112		12.2	5.3	40	0.6	185
8	207	SAGUNTHALA	46	F	72	112		12	3.8	24.4	0.6	165	77	110		14	4.0	19	0.8	241	80	110		14	4.1	29	0.8	170
9	481	CHINNAKANNU	51	M	93	111		11.8	5.2	23	1.2	163	86	110		12.4	5.3	22	0.8	174	90	120		13.5	5.3	24	0.8	175
10	223	PADMAVATHI	65	F	99	184		10.8	4.1	19	0.9	208	91	161		10.8	4.2	19	0.9	200	96	128		11	4.8	20	0.8	174
11	498	GANESAN	56	M	86	176		14	4.2	38	0.6	207	67	130		14.6	4.2	37	0.8	210	90	136		14.8	4.4	30	0.8	200
12	507	SELVAM	40	M	70	118		13	4	26	0.8	288	74	110		13	4.1	26	0.8	188	90	120		13.6	4.1	18	0.8	210
13	509	BALU	51	M	70	104		14.2	3.8	26	0.9	140	80	110		14	3.8	26	0.9	138	80	120		14.6	4.0	20	0.8	128
14	510	KARUPPAN	55	M	108	220		12	4.2	34	0.9	135	100	230		12.6	4.3	26	0.9	155	100	126		12.6	4.3	26	0.7	153
15	515	PERUMAL	50	M	84	96		13	4.4	41	0.8	130	92	109		13.2	4.4	29	0.8	140	90	106		13.6	4.5	21	0.8	130
16	241	CHANDARA	55	F	74	110		11	3.8	18	1.0	126	68	125		12.2	3.8	18	0.8	171	68	125		12.6	4.0	18	0.8	171
17	246	LALITHA BAI	65	F	86	168		11	4.0	20	1.2	163	93	118		12.6	4.0	20	0.8	143	93	118		12.6	4.0	20	0.8	163
18	530	BASAVARAJAN	70	M	89	107		12.2	3.5	19	1.0	155	90	100		12.6	3.8	17	1.0	155	97	110		12.4	3.8	17	1.0	180
19	251	MAYAVADHI	50	F	90	138		12.4	3.8	26	0.8	126	70	108		12.4	3.7	24	0.8	126	98	140		12.6	3.9	20	0.8	130
20	257	YAMUNA BAI	53	F	81	100		13.2	3.6	18	0.9	223	76	128		14.8	3.6	18	0.9	170	96	138		14.2	3.6	18	0.9	230

					FIRST DAY								24TH DAY								49TH DAY							
SI NO	OP NO	NAME	AGE	SEX	BLOOD SUGAR								BLOOD SUGAR								BLOOD SUGAR							
					F	PP	R	Hb	TRBC	Urea	S. creatin	S. chol	F	PP	R	Hb	TRBC	Urea	S. creat	S chol	F	PP	R	Hb	TRBC	Urea	S. creat	S. chol
					Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%	Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%	Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%
21	S510	k.santhanam	63	M	96.2	107.4		12.8	4.0	36	1.2	189	107	130		13.4	4.0	36	1.2	109	130	100		13.8	4.0	35	0.8	120
22	S1205	Muthulakshmi	53	F			119	10.8	3.5	40	12	232			124	11.6	3.5	38	0.8	188			108	11.6	3.5	38	0.8	176
23	S2585	Loganathan	60	M			107	10.2	3.5	39	0.9	120			100	11.0	3.5	38	0.9	125			102	11.0	3.5	38	0.9	120
24	S2861	Rajakumari	43	F	120	120		10.8	3.8	25	0.8	152	78	100		11	3.8	23	0.5	160	80	110		11.6	3.6	20	0.9	148
25	S2973	Sakum\nthala	57	F	141	141		9.8	3.7	26	1.2	210	86	110		12.5	3.6	26	1.2	220	86	110		12.5	3.6	25	1.0	180
26	M9760	Seenu	55	F	128	128		13	3.9	23	0.9	134	90	130		13	3.9	23	0.9	230	89	120		12.8	3.8	23	0.9	150
27	S6119	Santhya	44	F	89	89		12.2	3.6	25	0.8	135	80	110		12.2	3.6	23	0.9	125	86	120		12.2	3.6	23	0.8	160
28	S7163	Ramila	42	F			110	10.6	3.4	8	0.8	128			106	11	3.4	8	0.9	120			100	10.6	3.5	08	0.6	140
29	S9410	Sanmugavalli	58	F	252	252		10.8	4.1	18	1.2	172	128	240		10.8	4.1	18	0.9	132	124	250		10.8	4.3	18	0.8	180
30	S9944	Raju	65	M			244	11.8	4.0	28	1.3	236			220	12.8	4.8	28	1.0	230			210	13	4.9	28	1.1	220
31	S9802s	Unamalai	47	F	115	115		11.8	3.3	18	0.9	140	74	120		11.8	3.3	18	1.2	140	80	110		11.6	3.2	17	1.0	150
32	T270	Dhakshanamurthy	61	M	114	114		12.2	4.7	18	1.1	155	90	120		12.4	4.7	20	0.9	155	81	148		12.6	4.7	21	0.8	160
33	T1935	Rajenderan	52	M	163	163		12.8	5.0	21	0.8	180	130	163		12.8	5.0	21	0.8	180	80	120		12..2	5.2	20	0.9	189
34	T2034	Tulasi	65		178	178		12	4.3	22	0.9	190	96	180		12.4	4.8	22	0.8	180	96	170		12.6	4.8	20	0.8	170
35	T2529	Janabai	50	M			80	12.8	3.9	18	0.9	173			96	12.8	3.8	18	1.0	170			96	12.8	3.9	18	1.0	180
36	T3015	Ponnammal	50	F	104	104		11.2	4.0	18	0.8	142	86	110		12.2	3.9	18	0.8	140	80	120		11.2	3.9	18	0.9	130
37	T4330	Vijaylakshmi	52	F	90	138		10	4.1	16	0.9	200	94	140		10	4.0	16	1.0	210	88	110		10.4	4.0	16	0.9	200
38	T4521	Kaushalya	55	F			80	11.4	3.9	21	1.0	220			86	1.4	3.8	21	0.9	225			98	11.8	3.8	21	0.9	220
39	T5524	Rajamani	59	F	93	173		11.4	4.0	17	0.8	163	96	150		11.6	4.0	17	0.7	160	98	140		11.8	4.0	17	0.9	140
40	T5766	Arumugam	46	M	86	138		10.8	3.8	28	0.8	193	86	160		10.8	3.8	24	0.8	198	86	166		10.8	3.8	27	0.7	180

SI NO	OP NO	NAME	A G E	S E X	BLOOD SUGAR								BLOOD SUGAR								BLOOD SUGAR							
					F	PP	R	Hb	TRBC	Urea	S. creatin	S. chol	F	PP	R	Hb	TRBC	Urea	S. creat	S chol	F	PP	R	Hb	TRBC	Urea	S. creat	S. chol
					Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%	Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%	Mg%	Mg%	Mg %	%	MillionCells/ Cumm	Mg%	Mg%	Mg%
41	T6419	RAJI	50	F	83	97		13.8	3.8	24	0.6	218	86	100		13.8	3.8	24	0.7	210	90	110		13.8	3.8	16	1.0	200
42	T7414	MARIAMMAL	63	F	99	110		11.6	3.5	25	0.8	207	92	120		11.6	3.4	24	0.9	200	90	120		12.	3.4	21	0.7	200
43	T8561	RAJ KUMAR	48	F	84	107		12.2	3.6	24	0.8	170	90	110		12.2	3.5	24	0.6	180	89	120		12.2	3.5	17	0.8	180
44	T8605	MOHANRAJ	59	M			82	12.4	3.7	27	0.6	190			82	12.4	3.9	27	0.6	190			90	12.8	3.9	27	0.9	170
45	T8665	PUSHPA RANI	56	M	82	150		12.6	4.0	18	0.7	163	86	126		12.4	4.1	18	0.6	150	90	142		12.6	4.0	24	0.7	160
46	T8904	YETHIRAJULU	78	F	125	186		12.8	4.1	31	0.8	160	120	160		10.2	4.0	31	0.9	165	110	140		10.4	4.0	25	0.8	170
47	T9225	MANIKAM	65	M			122	11.8	3.9	25	0.9	180			120	12.8	4.0	25	0.9	180			110	12	3.8	24	0.9	180
48	T9020	VALLI	47	F	86	104		13.2	3.5	21	0.9	180	78	98		11.7	3.4	20	1.0	165	75	100		11.8	3.5	27	1.0	170
49	U1095	CHANDRAPILLAI	59	F	86	117		11.2	4.1	18	1.2	150	86	120		13.2	4.0	18	0.9	160	90	100		13.2	4.1	18	0.8	150
50	U1136	KANNIA	50	F	76	121		10.4	3.8	21	0.9	165	80	120		11.2	3.9	20	1.0	160	90	136		11.2	4.0	30	1.1	165
51	U1494	THIRUNAUKARASU	69	M	118	167		11.2	4.2	23	1.2	160	110	140		11.4	4.2	20	1.2	170	106	136		11.8	4.0	26	1.1	110
52	S7163	KANNATAHL	55	F	118	167		10.4	4.2	23	1.2	160	110	140		11.4	4.2	20	1.2	170	106	120		11.8	4.0	20	0.8	170
53	U6091	KANCHANA	52	F	92	156		10.4	40	26	0.8	220	90	130		10.4	4.1	26	0.9	240	86	140		10.4	4.0	18	0.9	230
54	U6499	DAHANALAKSHMI	62	F	113	186		10.6	3.5	20	0.9	200	110	150		11.6	3.5	20	0.9	190	102	135		11.6	3.5	21	0.8	190
55	U7214	DHARMARAJAN	62	M	110	157		11.6	4.0	30	0.8	192	109	145		12.4	3.9	20	0.8	190	96	220		11.8	4.0	20	0.7	190
56	U7552	KASTURI	55	F	107	216		12.4	3.8	28	0.8	180	100	200		11.4	3.8	20	0.8	198	110	120		12.8	3.8		0.9	198
57	U8708	ALAMELU	50	F	77	117		11.4	4.0	24	0.8	288	86	120		9.4	4.1	20	0.8	290	89	120		11.8	4.0	20	1.1	290
58	U8566	ALLAPICHAI	60	M	86	100		8.6	3.9	24	1.2	200	90	107		11.0	4.0	24	1.0	220	80	120		9.8	4.1	24	0.9	230
59	T7348	SARASWATHI	55	F	90	120		10.6	4.0	20	1.2	200	96	110		11	4.0	20	0.9	180	90	100		10.4	3.9	20	1.0	184
60		FATHIMA	45	F	95	110		9.4	3.5	23	1.0	180	86	100			3.4	19	0.7	160	80	100		10	3.4	20	1.0	150

URINE ANALYSIS

S.NO	IPNO	NAME	AGE	SEX	1ST DAY						24TH DAY						48TH DAY					
					Alb	Sug	DEPOSITS				Alb	Sug	DEPOSITS				Alb	Sug	ESR			
							Pus cells	Epi .cells	RBC's	Casts/ crystals			Pus cells	Epi .cells	RBC's	Casts/ crystals			Pus cells	Epi .cells	RBC's	Casts/ crystals
1	454	SENTHAMARAI	67	M	Nil	+	2-3	2-3	Nil	Nil	Nil	+	4-6	2-4	Nil	Nil	Nil	Nil	4-6	2-4	Nil	Nil
2	186	JOTHI	49	F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	4-6	4-6	Nil	Nil	Nil	Nil	2-3	2-4	Nil	Nil
3	455	NARAYANAN	70	M	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	5-6	5-6	Nil	Nil
4	194	JAYALAKSHMI	50	F	Nil	Nil	4-6	4-6	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
5	198	NAGAMAL	58	F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
6	475	BOOPTHAY	60	M	Nil	Nil	2-4	2-5	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
7	482	ABDUL JHADER	52	M	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
8	207	SAGUNTHALA	46	F	Nil	Nil	4-6	4-6	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
9	481	CHINNAKANNU	51	M	Nil	Nil	2-3	2-3	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	1-2	2-5	Nil	Nil
10	223	PADMAVATHI	65	F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-3	4-5	Nil	Nil
11	498	GANESAN	56	M	Nil	Nil	4-6	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
12	507	SELVAM	40	M	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
13	509	BALU	51	M	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
14	510	KARUPPAN	55	M	Nil	++	3-4	4-6	Nil	Nil	Nil	+	2-4	3-4	Nil	Nil	Nil	+	1-2	2-4	Nil	Nil
15	515	PERUMAL	50	M	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-4	2-4	Nil	Nil
16	241	CHANDARA	55	F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
17	246	LALITHA BAI	65	F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil
18	530	BASAVARAJAN	70	M	Nil	Nil	2-3	2-6	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
19	251	MAYAVADHI	50	F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
20	257	YAMUNA BAI	53	F	Nil	Nil	2-4	2-5	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil

S.NO	IPNO	NAME	AGE	SEX	1ST DAY						24TH DAY						48TH DAY					
					Alb	Sug	DEPOSITS				Alb	Sug	DEPOSITS				Alb	Sug	ESR			
							Pus cells	Epi .cells	RBC's	Casts/ crystals			Pus cells	Epi .cells	RBC's	Casts/ crystals			Pus cells	Epi .cells	RBC's	Casts/ crystals
21	S510	K.SANTHANAM	63	M	Nil	Nil	1-2	2-4	Nil	Nil	Nil	+	1-2	2-4	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil
22	S1205	MUTHULAKSHMI	53	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	5-6	Nil	Nil
23	S2585	LOGANATHAN	60	M	Nil	Nil	4-6	5-6	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil
24	S2861	RAJAKUMARI	43	F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-4	2-4	Nil	Nil
25	S2973	SAKUM\NTHALA	57	F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	1-2	4-6	Nil	Nil
26	M9760	SEENU	55	F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	3-4	Nil	Nil
27	S6119	SANTHYA	44	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
28	S7163	RAMILA	42	F	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
29	S9410	SANMUGAVALLI	58	F	Nil	Nil	3-4	2-4	Nil	Nil	Nil	Nil	1-2	1-2	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
30	S9944	RAJU	65	M	Nil	++	1-2	2-4	Nil	Nil	Nil	++	2-4	2-4	Nil	Nil	Nil	+	2-4	3-4	Nil	Nil
31	S9802s	UNAMALAI	47	F	Nil	Nil	1-2	1-2	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
32	T270	DHAKSHANAMURTHY	61	M	Nil	Nil	2-3	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
33	T1935	RAJENDERAN	52	M	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	4-5	Nil	Nil
34	T2034	TULASI	65		Nil	Nil	2-4	3-4	Nil	Nil	Nil	+	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
35	T2529	JANABAI	50	M	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	1-2	2-3	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
36	T3015	PONNAMMAL	50	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
37	T4330	VIJAYLAKSHMI	52	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
38	T4521	KAUSHALYA	55	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-3	2-4	Nil	Nil
39	T5524	RAJAMANI	59	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
40	T5766	ARUMUGAM	46	M	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil

S.NO	OPNO	NAME	AGE	SEX	1ST DAY						24TH DAY						48TH DAY					
					Alb	Sug	DEPOSITS				Alb	Sug	DEPOSITS				Alb	Sug	ESR			
							Pus cells	Epi .cells	RBC's	Casts/ crystals			Pus cells	Epi .cells	RBC's	Casts/ crystals			Pus cells	Epi .cells	RBC's	Casts/ crystals
41	T6419	RAJI	50	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
42	T7414	MARIAMMAL	63	F	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
43	T8561	RAJ KUMAR	48	F	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	3-4	4-6	Nil	Nil
44	T8605	MOHANRAJ	59	M	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	1-2	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
45	T8665	PUSHPA RANI	56	M	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	3-4	Nil	Nil
46	T8904	ETHIRAJULU	78	F	+	+	1-2	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
47	T9225	MANIKAM	65	M	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
48	T9020	VALLI	47	F	Nil	Nil	2-4	4-5	Nil	Nil	Nil	Nil	2-4	4-6	Nil	Nil	Nil	Nil	3-5	4-5	Nil	Nil
49	U1095	CHANDRAPILLAI	59	F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
50	U1136	KANNIA	50	F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	3-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
51	U1494	THIRUNAUKARASU	69	M	Nil	+	1-2	2-4	Nil	Nil	Nil	+	2-4	3-4	Nil	Nil	Nil	+	1-2	2-4	Nil	Nil
52	S7163	KANNATAHL	55	F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
53	U6091	KANCHANA	52	F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
54	U6499	DAHANALAKSHMI	62	F	Nil	+	2-4	3-4	Nil	Nil	Nil	+	1-2	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
55	U7214	DHARMARAJAN	62	M	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
56	U7552	KASTURI	55	F	Nil	+	2-4	4-5	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
57	U8708	ALAMELU	50	F	Nil	Nil	1-2	2-4	Nil	Nil	Nil	Nil	1-2	4-6	Nil	Nil	Nil	Nil	2-4	3-4	Nil	Nil
58	U8566	ALLAPICHAI	60	M	Nil	Nil	2-4	3-4	Nil	Nil	Nil	Nil	1-2	3-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil
59	T7348	SARASWATHI	55	F	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	2-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil
60		FATHIMA	45	F	Nil	Nil	2-4	1-2	Nil	Nil	Nil	Nil	3-4	2-4	Nil	Nil	Nil	Nil	1-2	2-4	Nil	Nil

STOOLS EXAMINATIONS

S.NO	IPNO	NAME	AGE	SEX	1ST DAY				24TH DAY				48TH DAY			
					OVA	CYST	OCCULT BLOOD	PUS CELLS	OVA	CYST	OCCULT BLOOD	PUS CELLS	OVA	CYST	OCCULT BLOOD	PUS CELLS
1	454	SENTHAMARAI	67	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
2	186	JOTHI	49	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
3	455	NARAYANAN	70	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
4	194	JAYALAKSHMI	50	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
5	198	NAGAMAL	58	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
6	475	BOOPTHAY	60	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
7	482	ABDUL JHADER	52	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
8	207	SAGUNTHALA	46	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
9	481	CHINNAKANNU	51	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
10	223	PADMAVATHI	65	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
11	498	GANESAN	56	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
12	507	SELVAM	40	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
13	509	BALU	51	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
14	510	KARUPPAN	55	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
15	515	PERUMAL	50	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
16	241	CHANDARA	55	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
17	246	LALITHA BAI	65	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
18	530	BASAVARAJAN	70	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
19	251	MAYAVADHI	50	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
20	257	YAMUNA BAI	53	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil

S.NO	OPNO	NAME	AGE	SEX	1ST DAY				24TH DAY				48TH DAY			
					OVA	CYST	OCCULT BLOOD	PUS CELLS	OVA	CYST	OCCULT BLOOD	PUS CELLS	OVA	CYST	OCCULT BLOOD	PUS CELLS
21	S510	K.SANTHANAM	63	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
22	S1205	MUTHULAKSHMI	53	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
23	S2585	LOGANATHAN	60	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
24	S2861	RAJAKUMARI	43	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
25	S2973	SAKUM\NTHALA	57	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
26	M9760	SEENU	55	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
27	S6119	SANTHYA	44	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
28	S7163	RAMILA	42	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
29	S9410	SANMUGAVALLI	58	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
30	S9944	RAJU	65	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
31	S9802s	UNAMALAI	47	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
32	T270	DHAKSHANAMURTHY	61	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
33	T1935	RAJENDERAN	52	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
34	T2034	TULASI	65		Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
35	T2529	JANABAI	50	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
36	T3015	PONNAMMAL	50	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
37	T4330	VIJAYLAKSHMI	52	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
38	T4521	KAUSHALYA	55	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
39	T5524	RAJAMANI	59	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
40	T5766	ARUMUGAM	46	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil

S.NO	OPNO	NAME	AGE	SEX	1ST DAY				24TH DAY				48TH DAY			
					OVA	CYST	OCCULT BLOOD	PUS CELLS	OVA	CYST	OCCULT BLOOD	PUS CELLS	OVA	CYST	OCCULT BLOOD	PUS CELLS
41	T6419	RAJI	50	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
42	T7414	MARIAMMAL	63	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
43	T8561	RAJ KUMAR	48	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
44	T8605	MOHANRAJ	59	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
45	T8665	PUSHPA RANI	56	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
46	T8904	ETHIRAJULU	78	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
47	T9225	MANIKAM	65	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
48	T9020	VALLI	47	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
49	U1095	CHANDRAPILLAI	59	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
50	U1136	KANNIA	50	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
51	U1494	THIRUNAUKARASU	69	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
52	S7163	KANNATAHL	55	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
53	U6091	KANCHANA	52	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
54	U6499	DAHANALAKSHMI	62		Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
55	U7214	DHARMARAJAN	62	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
56	U7552	KASTURI	55	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
57	U8708	ALAMELU	50	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
58	U8566	ALLAPICHAI	60	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
59	T7348	SARASWATHI	55	F	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil
60		FATHIMA	45	M	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil	Nil	Nil	Negative	Nil

BIBILIOGRAPHY

- Gunapadam Mooligai – Dr. Murugasa Mudaliyar, Gunapadam thathujeeva vaguppu,
- Siddha maruthuvam – Dr. Kuppusamy Mudaliyar
- Korakkar Santhraregai
- Yugimuni Vaidyakaaviyam
- Noi Naadal Noi Mudhal Naadal I & II – Dr. M. Shanmugaelu, H.P.I.M.
- Siddha Maruthuvanga chrukkam – Dr. K.S. Uthamarayar
- Siddha vaidthiya thirattu
- Theriyan Vagadam
- Therantharu
- Thottrakirama aaraichiyum siddha maruthuva varalarum
- Pathartha guna chinthamani – Dr. R.S. Uthamarayan.
- Indian Materia Medica Volume I & II, Dr. Nadkarni
- Wealth of India
- Thirukkural
- T.V. Sambasivam Pillai – Tamil & English Dictonary
- Sarabenthirar Vaidya Muraigal – Vatha roga sikichai, Patharthagunvilakkam
- Text Book of arthopaedics and truma – G.S. Kulkarni
- Orthopaedics and traumatology – Dr. Natarajan
- Davidsons Principles and practice of medicine – 19th edition.
- Sirappumaruthuvam Text book – Dr. R.Thiagarajan L.I.M
- Thirumoolanayanar sikicha ratna theepam
- Stedman's concise medical Dictionary illustrated
- Concise oxford dictionary
- www.worldortho.com
- www.herbs.org

BIBLIOGRAPHY

1. Siddha Vaidhiya Thirattu
2. Agasthiyar Guna vagadam
3. Agasthiyar Kanma Kandam
4. Agasthiyar Paripooranam 400
5. Agasthiyar Vaidhya Kaviyam – 1500
6. A text book of Human Anatomy – *Dr. T.S. Ranganathan, M.B.B.S., Ph.d.,*
7. A text book of Human Physiology – *Dr. Sarada Subramanian*
8. Dermatology in General Medicine – *Thomas B Fits Patric*
9. Roxburgh's common skin diseases – *Ronald Marks*
10. Gunapadam Mooligai Vaguppu – *Dr. Murugesa Mudaliyar, HPIM*
11. History of Siddha Medicine
12. Indian Meteria Medica, *Dr. K.M. Nadkarni*
13. Noi Illa Neri – *Dr. Durairajan*
14. Text book of Dermatology – *P.N. Behl*
15. Agasthiyar Pathartha Guna Sinthamani
16. Siddha Maruthuvam Sirappu – *Dr. R. Thiyagarajan, LIM*
17. Siddha Maruthuvanga Churukkam – *Dr. C.S. Uthamarayan*
18. Thotra Kirama Araichium Siddha Maruthuva Varalarum – *Dr. C.S. Uthamarayan*
19. The wealth of India.
20. Udal thathuvam – Dr. P.M. Venugopal
21. Yugi Vaidhya Chintamani – 800
22. Yugi Muni Perunool – 800
23. Taxonomy of Angiosperms – *S. Somasundaram, M.Sc., Ph.d.*
24. Agasthiyar Guru Naadi Nool
25. Agasthiyar Vaithya Vallathy – 600
26. Gunapadam Thathu Jeeva Vaguppu – *Dr. Thiyagarajan, HPIM*
27. Pathartha Guna Velakkam.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF SIDDHA TREATMENT (*MIRUTHARSINGI CHUNNAM* AND *POOCHU ENNAI*) FOR *AZALKEELVAYU (OSTEOARTHRITIS)*

CONSENT FORM

Certificate by Investigator

I certify that I have disclosed all details about the study in the terms readily understood by the Patient.

Date :_____ Signature _____

Name _____

Consent by Patient

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow – up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of **"Mirutharsingi Chunnam** and **Poochu Ennai"** for the management ***Azalkeelvayu*** **(OsteoArthritis)**

Date: Signature

Name:

Signature of Witness

Name:

Relationship:

DIET RESTRICTIONS

I. PULSE VARIETIES:

1. Bengal gram
2. Green gram
3. Garden pea
4. Dolichos
5. Cow pea
6. Black gram
7. Horse gram

II.GETABLES:

1. Tender bean
2. Plantain
3. Bottle gourd
4. Ash gourd
5. Pumpkin
6. Snake gourd
7. Sponge gourd
8. Bitter gourd
9. Cucumber
10. Mango

III.TUBERS:

1. Potato
2. Cassara plant tuber

IV.FLESH: Chicken

V. MEAT:

1. Pork
2. Beef
3. Sambar meat

VI. OTHERS:

1. Salty foods
2. Sour foods
3. Spicy foods
4. Fatty foods
5. Flours
6. Cool drinks

7.mustard seed

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF SIDDHA TREATMENT (MIRUDHARSINGI *CHUNNAM*

AND *POOCHU ENNAI*) FOR *AZALKEELVAYU (OSTEOARTHRITIS)*

FORM – II ASSESSMENT PROFORMA

1. IP / OP No.: _____ 2. Bed No.: _____ 3. S.No.: _____

4. Name:_____

5. Date of Admission to the trial : ☐☐☐☐☐☐

6. Date of Assessment: ☐☐☐☐☐☐

7. Day of Assessment: ☐☐

CLINICAL ASSESSMENT

	Right					Left				
	Rel.(1)	Dim.(2)	Per.(3)	Agg. (4)	NA. (5)	Rel. (1)	Dim. (2)	Per. (3)	Agg. (4)	NA. (5)
8. Pain:										
9. Sweeling:										
10. Warmth:										
11. Tenderness:										
1. Joint Line										
2. Medial side										
3. Lateral Side										
4. Supra patellar										
12. Morning Stiffness:										
13. Crepitations:										
14. Pertart.Mus. Atrophy:										
15. Instability:										
16. Deformity:										
17. Restricted Movements:										

18. Circumference of the joint (cm) : Right ☐☐ Left ☐☐

19 Naadi: 1.Vatham ☐ 2.Pitham ☐ 3.Kabam ☐ 4. Vatha Pitham ☐ 5. Vatha Kabam ☐

6.Pitha Kabam ☐ 7. Pitha Vatham ☐ 8. Kaba Vatham ☐ 9.Kaba Pitham ☐

Rel. (1) – Relived

Dim..(2) – Diminished

Per. (3) – Persists

Agg. (4) – Aggravated

NA (5) – Not Applicable

20. Neerkuri: Normal (1) Affected (2)

1. Niram ☐ ☐ _____
2. Manam ☐ ☐ _____
3. Edai ☐ ☐ _____
4. Nurai ☐ ☐ _____
5. Enjal ☐ ☐ _____

21. Neikuri : 1. Vathaneer ☐ 2.Pithaneer ☐ 3. Kabaneer ☐

22. Blood Pressure (mmHg) ☐☐☐ / ☐☐☐

23. Heart rate / min ☐☐☐

24. Pulse rate / min ☐☐☐

LAB INVESTIGATION (Only on days 24 and 48)

BLOOD

25. TC (Cells/Cumm): ☐☐☐☐

DC (%): 26.N ☐☐ 27.L ☐☐ 28.M ☐☐

29.E ☐☐ 30.B ☐☐

31. ESR (mm) : ½ Hr: ☐☐ 32. ESR (mm) :1 Hr: ☐☐

33. Hb (gm%) : ☐☐ . ☐

Blood Sugar (mg%): 34. Fasting ☐☐☐ 35 . Post – prandial ☐☐☐

36. Random ☐☐☐

37. Blood Urea (mg%) **:** ☐☐

38. Serum Cholesterol (mg%): ☐☐☐

URINE

39. Albumin - 0. Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

40. Sugar - 0. Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

41. Deposit : 1. Pus cells ☐ ____ 2. Epithelial cells ☐ ____ 3. Red blood cells ☐ ____

4. Casts/Crystal 0. Nil ☐ 1. Present ☐

MOTION		Present (1)	Absent (2)
42. Ova	-	☐	☐
43. Cyst	-	☐	☐
44. Occult blood	-	☐	☐
45 Pus cells	-	☐	☐

RADIOLOGICAL INVESTIGATION (Only on day 48)

46. X- Ray Findings: 1. Improved ☐ 2. No Change ☐ 3. Not done ☐

FOR O.P. PATIENTS:

47**. Drugs returned**

1. No. of Packets(65 mg) : ☐☐☐
2. Volume of Thylum(ml) ☐☐☐

48. **Drugs Issued**:

1. No of Packets (65 mg): ☐☐☐
2. Volume of Thylum (ml): ☐☐☐

49**. RESULT:**

1.Cured ☐ 2.Improved ☐ 3.No Change ☐

50. Date:_____ 51. Signature of Doctor: _____

52. Station: _____ 53. Signature of H.O.D.: _____

PROTOCOL

NATIONAL INSTITUTE OF SIDDHA, CHENNAI - 47

AN OPEN TRIAL OF SIDDHA TREATMENT (*MIRUTHARSINGI CHUNNAM* AND *POOCHU ENNAI*) FOR *AZALKEELVAYU (OSTEOARTHRITIS)*

Dr. M. ANBUTHANGAM

1. BACKGROUND

Osteoarthritis is a non inflammatory disorder of movable joints characterized by detorioration of articular cartilage and formation of new bone at the joint surfaces and margins. This disorder is also known as degenerative joint disease. Knee joints osteoarthritis is the leading cause of chronic disability in developed countries. The distribution of osteoarthritis in men & women is similar. Ages between 40-65Yrs commonly affected. In this age group, the prevalence is 68%.

In our siddha system, the term osteoarthritis is compared to Azalkeelvayu

According to siddha literature, ***Azalkeelvayu*** is one of the types of ***keelvayu*** diseases. ***Keelvayu*** Disease is one among the 80 ***Vathadiseases*** that is called ***Santhuvatham***. It is also called as ***Mootuvali, Santhusoolai.***

About the disease

In siddha text, **"Korakkar Santhraregai"** there is a preparation named **"*Mirutharsingi* C*hunnam*"** which is indicated for vatham 80. In ***Ugimunivaithyakaaviam*** text, there is an external application named **"poochu ennai"** which is indicated for ***muzhangalpiddipu.***

So, I would like to estimate their efficacy in a open trial in the OPD & IPD patients at the **National Institute of Siddha, Chennai -47.**

2. AIMS

(a) Primary aim

To estimate the efficacy of **" Mirutharsingi Chunnan"** and **"Poochu ennai"** in the treatment of **Azalkeelvayu**

(b) Secondary aim

To find out the side effects or adverse reactions of the drugs, if any.

3. POPULATION & SAMPLE

The population consists of all patients with Azalkeelvayu satisfying the inclusion and exclusion criteria mentioned below. The trial will be a single centric, open clinical trial. The sample consists of patients attending the IPD/OPD of the Ayothidoss pandithar Hospital of the National Institute of Siddha, Chennai – 47.

4. SAMPLE SIZE

The trial size will be 50 patients

5. INCLUSION CRITERIA

1. Patients who are having classical symptoms of Azalkeelvayu
2. Aged between 40 – 65yrs.
3. Willing to give blood specimen & willing to take X-ray for the investigation when required.
4. Willing to be in – patient for 49 days, or willing to attend OPD once in 8 days for 48 days

6. EXCLUSION CRITERIA

Patients with hypertension, stomach carcinoma, Peptic Ulcers, hypercholestremia, and patients with any serious illnesses

7. WITHDRAWAL CRITERIA

1. Any drastic changes occurring in hematological parameters & in urine analysis.
2. Development of any gastro-intestinal disturbances.
3. Occurrence of any other serious illness.

8. TRIAL DRUG & DURATION

Purgation:

Sithathi ennai - 5ml with sombukudineer (at early morning) – one day

Internal drug:

Mirutharsingi chunnam – 65 mg with Ghee – twice a day after food

External Application:

Poochu ennai - 30ml - External application

Trial treatment period - 48days.

9. TESTS & ASSESSMENTS

(a) Clinical assessment

Pain, swelling, warm, redness, tenderness, morning stiffness, crepitations, peri articular muscle atrophy, Movements of the joints, measurements of the joints in both knee joints.

(b) Investigations

1. Blood test: TC, DC, ESR, HB, Blood Urea, Serum Cholesterol, Blood Sugar.
2. X-ray findings.

10. CONDUCT

Azalkeelvayu patients satisfying inclusion & exclusion criteria will be admitted to the trial.

Informed consent will be obtained from the patients.

A day before starting trial treatment, neutralizing of ***Mukkutras*** by purgation will be carried out.

X-ray will be taken before treatment and at the end of the treatment

Lab investigations will be carried out before treatment on 24^{th} day and at the end of the treatment

For IP patients, the trial drug will be administered by the doctor. For op patients, the trial drugs will be issued for 8 days. They will be asked to come to op with unconsumed medicines and return them. On the 8th day, the trial drug will be given to the patient for another 8 days. At each clinic visit, clinical assessment will be taken. On 24^{th} and 48^{th} day, lab investigations will be carried out.

11. FORMS

Form I - Selection proforma - Used before admission of the patients to the trial.

Form II - Assessment form -Used once in 8 days during treatment.

12. ANALYSIS

Changes in the proportion of patients before and after treatment for signs and symptoms will be analysed using paired X^2 - test.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF SIDDHA TREATMENT (MIRUDHARSINGI *CHUNNAM* AND *POOCHU ENNAI*) FOR *AZALKEELVAYU (OSTEOARTHRITIS)*

FORM I – SELECTION PROFORMA

1. OP / IP NO: _____ 2.BED NO: _____ 3. S.NO : ☐☐

4. NAME : _____ 5. AGE : _____ 6. GENDER: M ☐ F ☐

7. MARITAL STATUS: 1. SINGLE ☐ 2. MARRIED ☐

3. WIDOW ☐ 4. SEPERATED ☐

8. DATE OF ADMISSION TO THE TRIAL: ☐☐☐☐☐☐

9. OCCUPATION: _____

10. POSTAL ADDRESS:

_____

_____

_____

11. COMPLAINTS & DURATION:

_____

_____

_____

_____

_____

_____

12. HISTORY OF PRESENT ILLNESS:

_____

_____

_____

_____

_____

_____

_____

13. PAST HISTORY:

Injury ☐ Fractures ☐ Not Applicable ☐

_____

_____

14. FAMILY HISTORY: 1. NO ☐ 2. YES ☐ _____

15. MENOPAUSE: 1. ATTAINED ☐ 2. NOT ATTAINED ☐ 3. NOT APPLICABLE ☐

16. SOCIAL STATUS: 1. LOW ☐ 2. MIDDLE ☐ 3. HIGH ☐

HABITS

	Yes (1)	No (2)
17. SMOKER	☐	☐
18. ALCOHOLIC	☐	☐
19. BETALNUT & TOBACCO CHEWER	☐	☐
20. NON – VEGETARIAN	☐	☐

GENERAL EXAMINATION

21. BODY WEIGHT (Kg) ☐☐

22. BODY TEMPERATURE (°F) ☐☐☐ . ☐

23. BLOOD PRESSURE (mmHg) ☐☐☐ / ☐☐☐

24. HEART RATE / min ☐☐☐

25. RESPIRATORY RATE / min ☐☐☐

26. PULSE RATE / min ☐☐☐

	Yes (1)	No (2)
27. PALLOR	☐	☐
28. JAUNDICE	☐	☐
29. CLUBBING	☐	☐
30. CYANOSIS	☐	☐
31. PEDAL OEDEMA	☐	☐
32. LYMPHADENOPATHY	☐	☐

CLINICAL EXAMINATION OF KNEE JOINTS:

Right ☐ Left ☐ Both ☐

33. PAIN

Aggravated by	Right: Yes (1)	Right: No (2)	Left: Yes (1)	Left: No (2)
1. Walking	☐	☐	☐	☐
2. Climbing Upstairs	☐	☐	☐	☐
3. Squatting	☐	☐	☐	☐
4. Standing up	☐	☐	☐	☐
5. Sitting Cross legged	☐	☐	☐	☐
6. Reduces With Rest	☐	☐	☐	☐

34. SWELLING:

	Right	Left
1. Present	☐	☐
2. Absent	☐	☐

35. WARMTH:

	Right	Left
1. Present	☐	☐
2. Absent	☐	☐

36. TENDERNESS:

	Right: Yes(1)	Right: No (2)	Left: Yes (1)	Left: No (2)
1. Joint line	☐	☐	☐	☐
2. Medial Side	☐	☐	☐	☐
3. Lateral Side	☐	☐	☐	☐
4. Supra Patellar	☐	☐	☐	☐

37. MORNING STIFFNESS:

	Right	Left
1. Mild	☐	☐
2. Moderate	☐	☐
3. Severe	☐	☐

38. CREPITATIONS : Right Left

1. Present ☐ 1. Present ☐

2. Absent ☐ 2. Absent ☐

39. PERIARTICULAR MUSCLE ATROPHY:

1. Present ☐ 1. Present ☐

2. Absent ☐ 2. Absent ☐

40. INSTABILITY:

0. Nil ☐ 0. Nil ☐

1. Anteroposterior ☐ 1. Anteroposterior ☐

2. Mediolateral ☐ 2. Mediolateral ☐

41. DEFORMITY: Yes (1) No (2) Yes (1) No (2)

1. Varus ☐ ☐ ☐ ☐

2. Valgus ☐ ☐ ☐ ☐

3. Flexion ☐ ☐ ☐ ☐

42. RESTRICTED MOVEMENTS OF THE JOINTS AT FLEXION:

1. Present ☐ 1. Present ☐

2. Absent ☐ 2. Absent ☐

43. GIRTH OF THE THIGH MUSCLE (in cm):

1.Right ☐☐ 2. Left ☐☐

44. CIRCUMFRENCE OF JOINTS (cm): 1. Right ☐☐ 2. Left ☐☐

EXAMINATIONS OF VITAL ORGANS

	Normal (1)	Abnormal (2)	
45. CVS	☐	☐	_____
46. R.S	☐	☐	_____
47. ABDOMEN	☐	☐	_____

SIDDHA ASPECTS

48**. NILAM**

1. Kurinji ☐ 2. Mullai ☐ 3. Marutham ☐ 4 .Neithal ☐ 5.Palai ☐

49**. KALA IYALBU**

1. Kaarkaalam ☐ 2. Koothirkallam ☐ 3. Munpanikaalam ☐

4 . Pinpanikaalam ☐ 5. Ilavenirkaalam ☐ 6.Muduvenirkaalam ☐

50**. UDAL IYALBU**

1.Vatham ☐ 2.Pitham ☐ 3.Kabam ☐ 4. Vatha Pitham ☐ 5. Vatha Kabam ☐

6.Pitha Kabam ☐ 7. Pitha Vatham ☐ 8. Kaba Vatham ☐ 9.Kaba Pitham ☐

51**. GUNAM**

1.Sathuvam ☐ 2.Rasatham ☐ 3.Thamasam ☐

AYMPORIGAL

	Normal (1)	Affected (2)	
52. Mei	☐	☐	_____
53. Vaai	☐	☐	_____
54. Kan	☐	☐	_____
55. Mookku	☐	☐	_____
56. Sevi	☐	☐	_____

KANMENDHIRIUM / KANMAVIDAYAM

	Normal (1)	Affected (2)	
57. Kai	☐	☐	_____
58. Kaal	☐	☐	_____
59. Vaai	☐	☐	_____
60. Eruvaai	☐	☐	_____
61. Karuvaai	☐	☐	_____

UYIR THATHUKKAL

VATHAM

	Normal (1)	Affected (2)	
62. Pranan	☐	☐	_____
63. Abanan	☐	☐	_____
64. Viyanan	☐	☐	_____
65. Uthanan	☐	☐	_____
66. Samanan	☐	☐	_____
67. Nagan	☐	☐	_____
68. Koorman	☐	☐	_____
69. Kirukaran	☐	☐	_____
70. Devathathan	☐	☐	_____
71. Dhananjeyan	☐	☐	_____

PITTHAM

	Normal (1)	Affected (2)	
72. Anar pittham	☐	☐	_____
73. Ranjagam	☐	☐	_____
74. Sathagam	☐	☐	_____
75. Alosagam	☐	☐	_____
76. Prasagam	☐	☐	_____

KABAM

	Normal (1)	Affected (2)	
77. Avalambagam	☐	☐	_____
78. Kiletham	☐	☐	_____
79. Pothagam	☐	☐	_____
80. Tharpagam	☐	☐	_____
81. Santhigam	☐	☐	_____

UDAL THATHUKKAL

	Normal (1)	Affected (2)	
82. Saaram	☐	☐	_____
83. Senneer	☐	☐	_____
84. Oon	☐	☐	_____
85. Kozhuppu	☐	☐	_____
86. Enbu	☐	☐	_____
87. Moolai	☐	☐	_____
88. Sukkilam / Suronitham	☐	☐	_____

ENVAGAI THERVUGAL

	Normal (1)	Affected (2)	
89. Naa	☐	☐	_____
90. Niram	☐	☐	_____
91. Mozhi	☐	☐	_____
92. Vizhi	☐	☐	_____
93. Sparisam	☐	☐	_____

94. Naadi

1.Vatham ☐ 2.Pitham ☐ 3.Kabam ☐ 4. Vatha Pitham ☐ 5. Vatha Kabam ☐

6.Pitha Kabam ☐ 7. Pitha Vatham ☐ 8. Kaba Vatham ☐ 9.Kaba Pitham ☐

Malam

	Normal (1)	Affected (2)	
95. Niram:	☐	☐	_____
96. Nurai:	☐	☐	_____
97. Kirumi:	☐	☐	_____
98. Kalappu:	☐	☐	_____

99. Thanmai: Erugal / Elagal

MOOTHIRAM

Neerkuri

	Normal (1)	Affected (2)	
100. Niram	☐	☐	_____
101. Manam	☐	☐	_____
102. Edai	☐	☐	_____
103. Nurai	☐	☐	_____
104. Enjal	☐	☐	_____

Neikuri 1.Vatha Neer ☐ 2.Pitha Neer ☐ 3. Kaba Neer ☐

_____

LAB INVESTIGATIONS

BLOOD

105. TC (Cells/Cumm): ☐☐☐☐

DC (%): 106.N ☐☐ 107.L ☐☐ 108.M ☐☐

109.E ☐☐ 110.B ☐☐

111. ESR (mm) : ½ Hr: ☐☐ 112. ESR (mm) :1 Hr: ☐☐

113. Hb (gm%) : ☐☐ . ☐

Blood Sugar (mg%): 114. Fasting ☐☐☐ . ☐ 115 . Post – prandial ☐☐☐ . ☐

116. Random ☐☐☐ . ☐

117. Blood Urea (mg%) **:** ☐☐

118. Serum Cholesterol (mg%): ☐☐☐

URINE

119. Albumin - 0. Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

120. Sugar - 0. Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

121. Deposit : 1. Pus cells ☐ _____ 2. Epithelial cells ☐ _____

3. Red blood cells ☐ 4. Casts/Crystal 0. Nil ☐ 1. Present ☐

MOTION	Present (1)	Absent (2)
122. Ova -	☐	☐
123. Cyst -	☐	☐
124. Occult blood -	☐	☐
125. Pus cells -	☐	☐

RADIOLOGICAL INVESTIGATION

126. X- RAY: KNEE JOINTS < AP / Lat View - Standing

_____

_____

_____

127 .Admitted to trial: 1.Yes ☐ 2. No ☐

128. If Yes, S.No.: ☐☐ 129. IP (1) ☐ OP (2) ☐

130. Date of purgation: ☐☐☐☐☐☐

Drugs issued for O.P. patients.

131. No. of Packets (65 mg): ☐☐

132. Volume of Thylum (ml): ☐☐☐

133. Date : _____ 135. Signature of Doctor: _____

134. Station:_____ 136. Signature of H.O,D: _____

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF SIDDHA TREATMENT (*MIRUDHARSINGI CHUNNAM* AND *POOCHU ENNAI*) FOR *AZALKEELVAYU (OSTEOARTHRITIS)*

Form – II Assessment Form

1. IP / OP NO: _____ 2. BED NO: _____ 3. S.NO: _____

4. NAME:_____

5. DATE OF ADMISSION: | | | | | | |

6. DATE OF ASSESSMENT: | | | | | | |

7. DAY OF ASSESSMENT: | | |

CLINICAL ASSESSMENT

	1. Relieved		2. Diminished		3. Persistent		4. Aggravated		5. No	
	Rt.Jt	Lt.Jt	Rt.Jt	Lt.Jt	Rt.Jt	Lt.Jt	Rt.Jt	Lt.Jt	Rt.Jt	Lt.Jt
8. PAIN:										
9. SWEELING:										
10. WARM:										
11. REDNESS:										
12. TENDERNESS:										
13. MORNING STIFFNESS:										
14. CREPITATIONS:										
15. RESTRICTED MOVEMENT:										

16. MEASUREMENTS: Right (cm) Left (cm)

17. Naadi: _____

18 Neerkuri: _____

19. Neikuri : _____

LAB INVESTIGATIONS

BLOOD

20. TC (Cells/Cumm): | | | | |

DC (%): 21.N | | | 22.L | | | 23.M | | |

24.E | | | 25.B | | |

| | | | |

26. SR (mm) : ½ Hr: 27. ESR (mm) :1 Hr:

28. Hb (gm%) : ☐☐ . ☐

Blood Sugar (mg%): 29. Fasting ☐☐☐ 30 . Post – prandial ☐☐☐

31. Random ☐☐☐

32. Blood Urea (mg%) **:** ☐☐

33. Serum Cholesterol (mg%): ☐☐☐

URINE

34. Albumin - 0. Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

35. Sugar - 0. Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

36. Deposit : 1. Pus cells ☐ 2. Epithelial cells ☐ 3. Red blood cells ☐

4. Casts/Crystal ☐

MOTION	Present (1)	Absent (2)
37. Ova -	☐	☐
38. Cyst -	☐	☐
39. Occult blood-	☐	☐
40. Pus cells -	☐	☐

RADIOLOGICAL INVESTIGATION:

41. X- Ray Findings: 1. Improved ☐ 2. No Change ☐ 3. Not Applicable ☐

FOR O.P. PATIENTS:

42**.** Drugs returned

1. No.of Packets(mg) : ☐☐☐
2. Volume of Thylum(ml) ☐☐☐

43. Drugs Issued:

1. No of Packets (mg): ☐☐☐
2. Volume of Thylum (ml): ☐☐☐

44**. RESULT:**

1.CURED ☐ 2.IMPROVED ☐ 3.NOCHANGE ☐

45. Date:_____

46. Station: _____ 47. Signature of Doctor_____

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF SIDDHA TREATMENT (*MIRUDHARSINGI CHUNNAM* AND *POOCHU ENNAI*) FOR *AZALKEELVAYU (OSTEOARTHRITIS)*

CONSENT FORM

Certificate by Investigator

I Certify that I have disclosed all details about the study in the terms readily understood by the Patient.

Date :_____ Signature _____

Name _____

Consent by Patient

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow – up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of **"Mirudharsingi Chunnam** and **Poochu Ennai"** for the management ***Azalkeelvayu* (OsteoArthritis)**

Date: Signature

Name:

Signature of Witness

Name:

Relationship:

DIET RESTRICTIONS

I. PULSE VARIETIES:

1. Bengal gram
2. Green gram
3. Garden pea
4. Dolichos
5. Cow pea
6. Black gram
7. Horse gram

II.GETABLES:

1. Tender bean
2. Plantain
3. Bottle gourd
4. Ash gourd
5. Pumpkin
6. Snake gourd
7. Sponge gourd
8. Bitter gourd
9. Cucumber
10. Mango

III.TUBERS:

1. Potato
2. Cassara plant tuber

IV.FLESH: Chicken

V. MEAT:

1. Pork
2. Beef

3. Sambar meat

VI. OTHERS:

1. Salty foods
2. Sour foods
3. Spicy foods
4. Fatty foods
5. Flours
6. Cool drinks

7.mustard seed